

Issued Every Month

For Free Distribution to Users
of Machine Tools

**HITCHCOCK'S
MACHINE
TOOL LIST**

A Reference Book for Buyers
of Iron Working Machinery

Published by
A. H. HITCHCOCK
1220-1235 Caxton Building
Chicago

MOTOR DRIVE FOR MACHINE TOOLS

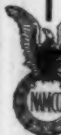
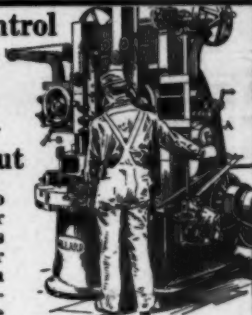
Convenient control
of starting
and stopping
Saves power—
Increases output

THE extent to which motor drive proves effective as a power saver and results in increased output depends largely on the ease with which the operator can start and stop his machine.

The simple automatic starters which can be used with Reliance Adjustable Speed Motors require merely the throwing of a switch or the pressing of a button. The control stations may be placed at the most convenient points on the machine and as many as desired may be used—see illustration, control points at A and B. This method results in a saving of power as the operation of starting and stopping is so simple and easy that the operator does not hesitate to shut down his machine the minute power is not longer needed.

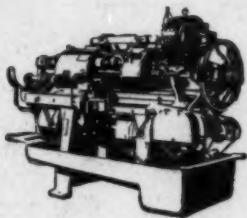
*Write today for our Folder 10-L which tells in detail
Why Reliance Motors are ideal for machine tool drive.*

Reliance Electric & Engineering Co.
1050 Ivanhoe Rd. : Cleveland, Ohio





THE No. 56 MOTOR DRIVE



THE Acme Automatic will improve the quality and quantity of your screw machine products for the coming year.

It is rapid because it is designed and tooled for the completion of parts up to eight or nine operations in the time of the longest single operation. It is also built to hold the finest accuracies and finish on all classes of work.

The machine requires very little attention. One man may run from four to six Acmes at a time. The cost for upkeep is minimum: Second operation machines are often eliminated.

It is Rapid, Accurate and Economical.

The National-Acme Mfg. Co.

Cleveland, Sixth City

New York, Boston, Chicago
Detroit, Atlanta, Montreal



Red-E Round Nose Roughing Tool



Increase the speed of your lathe 25%

See that your operator sharpens his cutter every two hours and we will guarantee the results with this modern tool holder.

The Ready Tool Company
Bridgeport, Conn.



Are You Tired of Paying Big Bills for High Speed Steel?

ARMSTRONG TOOL HOLDERS

Make 1 lb. of Tool Steel go as far as 10 lbs. in Forged Lathe and Planer Tools.

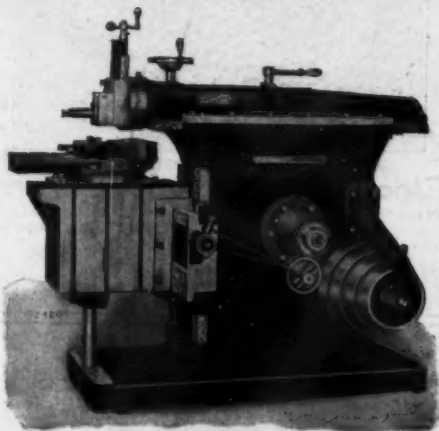
Write for catalog—it tells other advantages

Armstrong Bros. Tool Co., 308 N. Francisco Ave.
CHICAGO.



"Cincinnati" Heavy Duty

Crank Shapers Are Powerful



24-inch, Back Geared

Built on a heavy foundation, with the column exceptionally wide and deep, and ribbed and braced internally to resist any strain. It has a wide bearing for the ram, and is given unusual length by the overhanging horns. The rail also is deep and heavy with horizontal ribs, and is gibbed strongly to the column.

Powerful and accurate, this shaper gives constantly maximum service at lowest cost. Mr. Manufacturer, we invite you to turn on your X-ray, and make a careful comparison.

Get our Shaper Book—it gives reasons.

The Cincinnati Shaper Co.

Colerain Ave. & Elam St., CINCINNATI, OHIO



Floor Operated Electric Traveling Cranes

do not require an operator in constant attendance and are frequently as well or better adapted for handling material than the more expensive cab operated.

We make all types of overhead cranes and hoists.

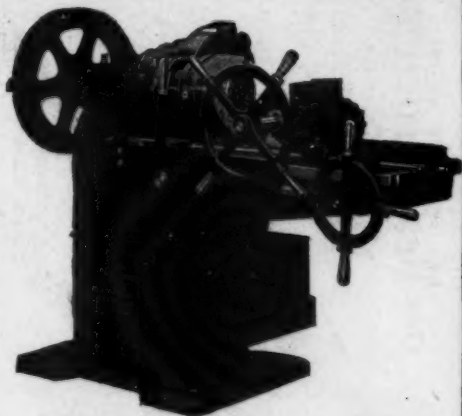
The Euclid Crane & Hoist Company
Euclid, Ohio



**Trolleys
and
Hoists
To 10 Tons**

Also Cranes, Derricks,
Hoisting Engines, Crabs,
Bucket Trolleys, &c., &c.

Victor R. Browning & Co.
Cleveland, Ohio



Reliance Bolt Cutters

Built in sizes $\frac{3}{4}$ inch to 6 inches, Single, Double and Triple, of the most up-to-date design. There is, also, a good reason why the "Reliance" is such a satisfactory machine for accuracy of threads cut, large production and low cost of maintenance, even in the hands of inexperienced labor. A lot of this reason is in the Opening Die Head, and we would like to tell you all about it. Interesting information for the asking.

The Foote-Burt Co., Makers
Cleveland, Ohio

One Besly Grinder

with unskilled operator

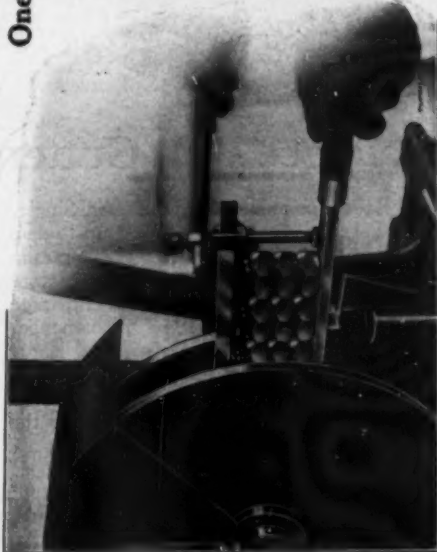
Displaced Ten Milling Machines
and reduced cost ninety per-
cent on finishing sides of
brass hexagon nuts. 1,000
to 6,000 surfaces per hour.

INVESTIGATE

Send drawings, sketches or
samples of your work and learn
how much a Besly Grinder
will save in your shop.

Ask for illustrated booklet, "Besly's Modern
Disc Grinding Practice." It's Free.

Besly—Chicago
120 N. Clinton Street
Largest Manufacturers of Disc Grinders in
the World.



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vari

Ra



AT LAST

The Ransom Patent Speed Controller
gives us what we have all been looking for, for years

A speed regulator that keeps the periphery speed constant as an emery wheel wears down in diameter.

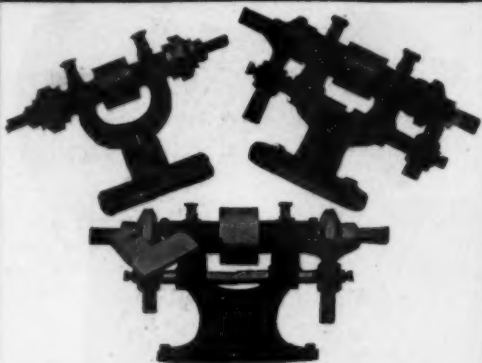
It is a safety device too. Why?

Because it is impossible to speed the wheel faster than it should run. It is made fool proof. Motor has variable speed 2 to 1.

These machines are made in all sizes.

Write for bulletin No. 9 giving full description

Ransom Manufacturing Co.
Oshkosh, Wis.



Partridge Emery Grinders

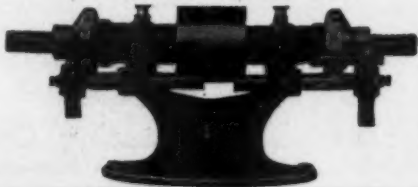
Here are four well-made Bench Grinders, adapted to light, medium and heavy work. Also furnished mounted on column. In addition, I make a high-grade heavy Floor Grinder of the cabinet type, thus being able to meet all demands for this class of tools. They are all well built, of the right materials, and have features of excellence that will interest you.

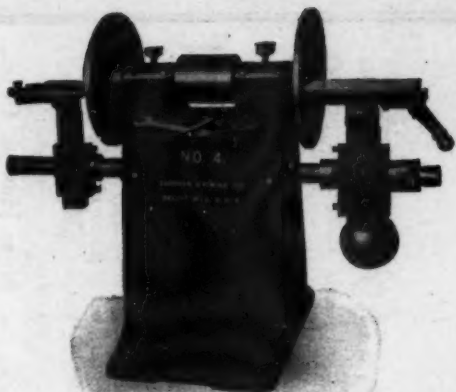
Tell me your needs in this line, and I will gladly mail full description and quote interesting price

E. O. PARTRIDGE

2047-9 Lake Street, - - CHICAGO

Also Foot Presses and Tapping Machines





Gardner Disc Grinders Demand Your Investigation

If an increased output of from 3 to 30 times better than your present method proves interesting, if an initial investment of one-fourth the cost of your present tools for the same work looks attractive, and you don't know these facts to be a guaranteed truth, Gardner Grinders *certainly demand your investigation.*

We make the largest, most complete and reliable line of disc grinding machinery and accessories in the world. All sizes and types, carrying disc wheels from 10-inch to 53-inch diameter. Our Experimental Department will test-grind your samples, free of charge, giving you authentic figures which will open your eyes to a new and big saving.

Do You Receive

our illustrated paper the "Gardner Grinder?" It's free. Keeps you up-to-date on this rapidly growing subject, contains no advertising—full of practical help and suggestions on modern disc grinding practice.

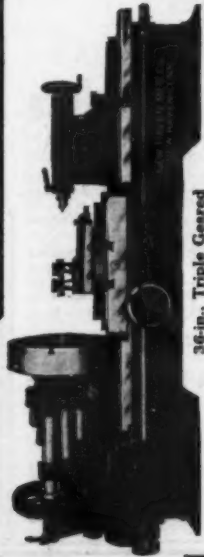
Ask for copy of "Actual Operations."

Gardner Machine Company

(The Disc Grinding Authorities)

Beloit,

Wisconsin



36-in., Triple Geared

60 years old and younger than ever in everything but experience.

The Organization that Builds

New Haven High-Power Modern Lathes

Is made up in this way:-

It has the young blood to keep it abreast of the times—hustling, enthusiastic, modern—tempered with the conservatism of experience and the New Haven tradition for thoroughness and reliability.

THE RESULT: Lathes that are not only right up to date, but *up to date right*.

18-in. to 65-in. Swing, Belt or Motor Drive

Tell us your requirements, and let us describe what we believe will suit you best and quote an interesting price

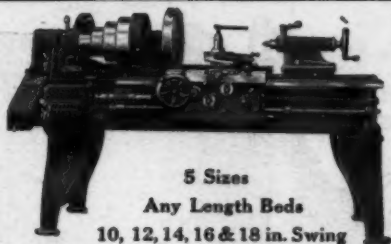
New Haven Manufacturing Co., - New-Haven, Conn.

Know
their
Doul
Leg.

TH

16
17
the
CH

“C



5 Sizes

Any Length Beds

10, 12, 14, 16 & 18 in. Swing

"Champion" Engine Lathes

We illustrate our heavy type rapid change all gear feed 16 inch Lathe. $1\frac{1}{8}$ in. hole in spindle, swing over bed $17\frac{1}{8}$ in., over carriage $11\frac{1}{4}$ in. The best lathe proposition in the market today, and at the right price.

Champion Tool Works Co.,

2426 Spring Grove Ave., Cincinnati, Ohio, U. S. A.

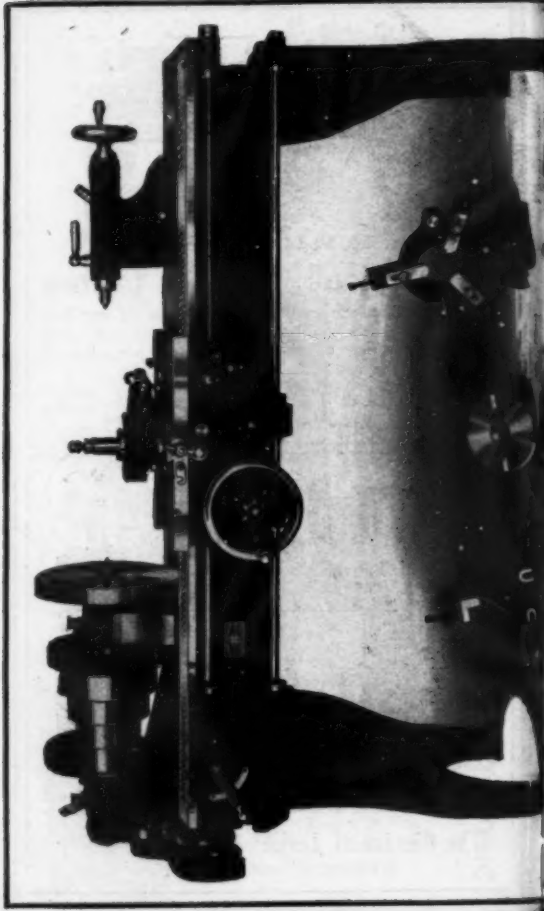


**Owners of
Cincinnati Lathes**

Know, and their consistent performance everywhere demonstrates their absolute dependence to do any work within its range. All have Double Wall Apron, Chasing Dial, Automatic Stop, Cabinet Leg, 5 step Cone or wide 3 step Cone, with double back gears.

The Cincinnati Lathe & Tool Company

Oakley, Cincinnati, Ohio



New 14-Inch Engine Lathe

Combining the capacity and economy of a modern manufacturing tool with the conven-

New 14-Inch Engine Lathe

Combining the capacity and economy of a modern manufacturing tool with the convenience and accuracy of a machine designed for tool room work. Note the special features.

Bed. Of deep section, cross braced at short intervals, and back planed for taper attachment.

Head Stock. Massive, with large bearings; high carbon, ground steel spindle, with 1½-inch hole full length, taking draw-in collets up to 1-inch capacity.

Tail Stock. Offset type, allowing compound rest to set parallel with bed, with set-over for turning tapers, and cam-lever for tightening.

Carriage. Very heavy, with 20-inch bearing on ways; securely gibbed to bed.

APRON. A new design with double bearing for all shafts, a feature of great value. This double apron is unusually rigid, durable and efficient under heavy duty. Cross feed and compound graduated to thousandths.

FEEDES. Another strong feature. The simplified gear box is used both for feeds and for thread cutting. It has three positive changes, and with change-gears furnished, gives 48 different feeds; all changes easy and quick. Cuts threads 3 to 92 to the inch.

This is a splendid all-around repair tool; a money saving manufacturing lathe; an exact machine for the tool room. It marks a notable advance in lathe design and construction.



For full description write for Bulletin No. 13

Rockford Lathe & Drill Co.

1827 14th Ave., Rockford, Ill.



Fay & Scott Lathes



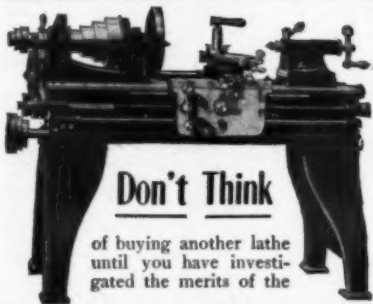
Plain Turret Chucking Lathe

We have a size for your exact requirements—16, 18, 20, 24, 28 and 32 inch. Each one is built with great care and precision—every part is thoroughly inspected before assembling. The result is a first class, rigid tool, that will give accurate and economical service. They stand up well under the heaviest strain, making it only a question of what the cutting tools will endure.

Better have our Catalog on file for reference

FAY & SCOTT, - Dexter, Maine

Complete line of Standard Engine, Extension Gap and Patternmakers' Lathes, Planer and Shaper Centers.



Don't Think

of buying another lathe
until you have investi-
gated the merits of the

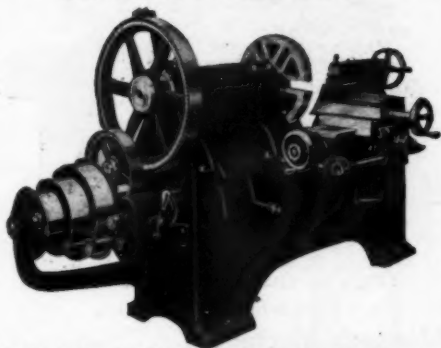
Sebastian 15-Inch Lathe

High Quality Low Price

Catalog?

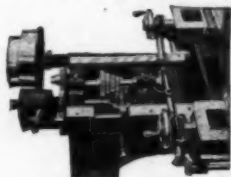
THE SEBASTIAN LATHE COMPANY
101 Culvert St., Cincinnati, Ohio

The Cincinnati High Duty 20 inch Pulley Lathe



A Strictly Modern Tool Built for Service
Every Feature Designed to Save Time

**Fast
Cutting
and
Easily
Operated.**



**Extremely
Rigid,
Insuring
Accurate
Work.**

Capacity, Pulleys 20" diameter, 24" face.

Quick Change Gears and Gear Box give 12 changes of feed.

Ratio of finest to coarsest 1 to 16, permitting a variety of feeds to suit any roughing and finishing.

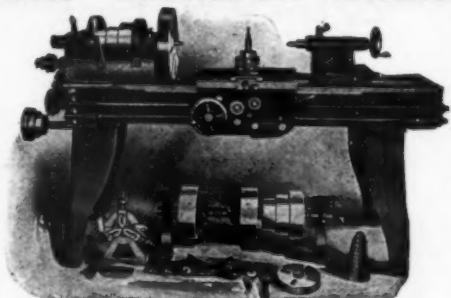
Six changes of speed which, with the heavy gearing, allows heavy and fast cutting.

Tools operated from both sides of the machine.

Swiveling Table—instantly adjusted for crowning.

The Cincinnati Pulley Machinery Co.
Cincinnati, Ohio

The Monarch Lathe

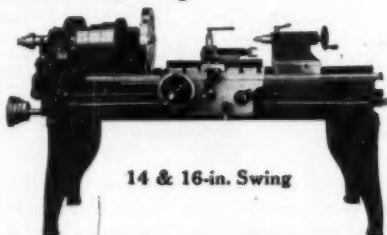


High in Quality—Low in Price

Ask us to tell you more about them.

Monarch Machine Co., Sidney, O.

Certainty



14 & 16-in. Swing

in operation is insured by the *Strength, Accuracy and Simplicity* of MIAMI VALLEY LATHES. Careful buyers also like their price for the quality.

Don't miss a good thing; write us.

The Miami Valley Machine Tool Co.

840 Germantown St., Dayton, Ohio

The All Geared Drills

Eliminate Slipping, Troublesome, Time-wasting and Expensive Cone and Inherent Speed and Feed Belts.

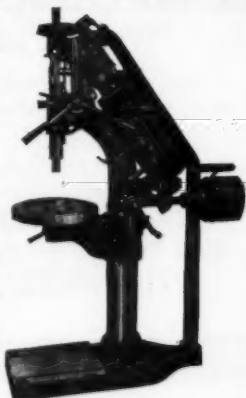
Eight Geared Speeds and eight Geared Feeds, all under instant control from front of machine.

Our 20-Inch All Geared Drill

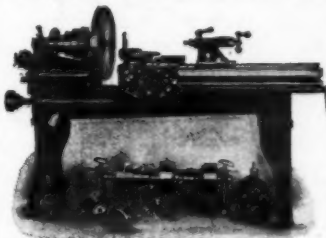
Drives a 1-inch high speed twist drill 8 inches per minute in cast iron and 4 inches per minute in mild steel. Taps 1½-inch in cast iron.

Built also in 24-inch size for heavier drilling and tapping work. Both sizes also furnished in gangs.

It will pay to investigate. Send for complete NEW Bulletins and Prices.



13-22" Extension Gap Lathe



This Lathe swings 13½" over top bed and 22½" thru the gap, and takes up to 8' between centers.

Just the thing for many classes of work, and saves investing in a large expensive lathe.

The machine is built strong, rigid and accurate, and has all necessary accessories as shown.

Descriptive bulletin "H" and price at your command.

Barnes Drill Co., (Inc. 1907)
828 Chestnut St., Rockford, Ill., U. S. A.

A Machine Reamer

Without an Equal

in steel, phosphor bronze, brass, and all hard, tough, fibrous metals.

Reams every hole true, smooth and round. Does not bind, heat up or clog up with chips.

Because of its large, accurate adjustment, will outwear a dozen solid reamers.

The Ideal Adjustable



High Speed Machine Reamer

Radically different in construction, and stronger than any other adjustable reamer. Two solid blocks of High Speed Steel held on a tapered arbor by two powerfull collars—nothing more. Four left hand spiral cutting edges milled in the solid head—no inserted teeth.

A postal card will bring you our catalog No. 3, describing McCrosky and Ideal Reamers, Wizard Quick-Change Chucks, etc., etc.

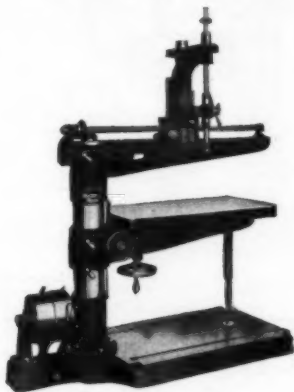
"The longer you wait—the more you lose"

The McCrosky Reamer Co., Inc.

Meadville, Pa.

Radial Drilling Machine

For Holes up to $\frac{3}{4}$ inch



Its power, accuracy, convenience of adjustment, wide range and quick action spell economy where the value of a tool is measured by its daily output of satisfactory work. It was designed especially for a manufacturers' machine, but its adaptability is such that it completely fills the bill for any purpose requiring a tool of this type. Automatic power feed, lever feed, high speed sensitive or tapping heads may be used, either singly or in combination. Three spindle speeds; positive, silent chain and gear drive; outer support for table; no countershaft required.

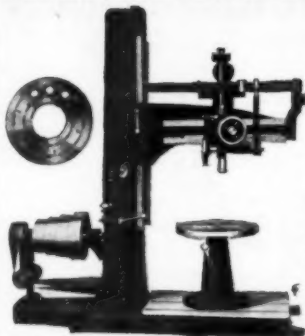
Let us demonstrate that it is just the machine you want

The Taylor & Fenn Company

Machinists and Founders

Hartford, Connecticut

Annular Ball Bearings



Go Into Gang Radials

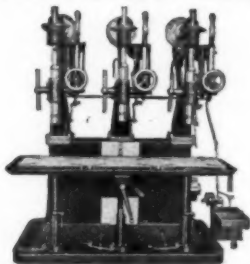
17 of the finest imported go into each machine, besides 2 thrust ball bearings. This gives the least possible amount of friction even when running at highest speeds. Equally sensitive for both drilling and tapping. All belt drive.

Circular gives details and records

The Wm. E. Gang Company

Cincinnati, Ohio

Rockford Gang's



They not only drill, but they bore, ream, tap and face without removing work from jig.

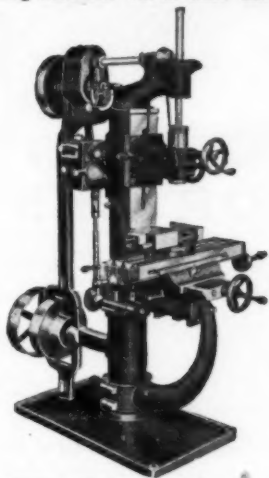
Write for descriptive matter

Rockford Drilling Machine Company

Rockford, Ill., U. S. A.

Makes Machining Easy

The kind that is hard to do on other machines—
that's where the No. 2 Knight Milling and
Drilling Machine saves time and cost



WHETHER YOU ARE a large or small manufacturer, this handy machine will save you lots of time on a big variety of work. It is *the* machine for dies, jigs, moulds, metal patterns, etc., etc. Mills, bores and drills at almost any angle without resetting the work. Often does the work of two or more machines.

*Our circular will give you a better idea of its great usefulness;
write for a copy*

W. B. Knight Machinery Co.
St. Louis, Mo.

No. 1 and No. 1 1-2 are Lighter Machines of the same type



IF HOLES

Trade

play an important part

Trade



Mark

**IN YOUR
BUSINESS**

you need



Mark

“DETROIT” DRILLS

They drill fast and clean, keep their edge and will bore the greatest number of holes in the least time without regrinding. They are ground to the one two-thousandth of an inch, the lips are equal, the web central and the grooves milled with the utmost care.

Send for Catalog “J”. Select a trial order and test them out in your own plant before January 1st. You can lose money or save it by your choice of drills. What about your choice for 1912?

Detroit Twist Drill Company
510-522 Fort St., DETROIT, MICH.



STANAR

Adjustable Reamers



**A Conservative "Long
Time" Investment that Pays
Big Dividends from the start.**

These reamers are especially profitable to use for work requiring the maintenance of fixed standards of accuracy.

When they show signs of wearing below standard size, it is easy to readjust and regrind the blades to the exact size required.

Adjustable---Rigid Always Accurate

A "StanaR" Adjustable Reamer with its original set of blades will out-wear and out-last several solid reamers; and when the original blades are finally worn out, a new set can be obtained for the old body at slight cost. Then you have practically a new reamer.

Blades of Carbon or High-Speed Steel can be furnished, and they are interchangeable in one body. This is an *exclusive* "StanaR" feature.

Shall we have your trial order today? Ask for Catalog No. 19.

THE STANDARD TOOL CO.
Cleveland
Sixth City

FREE!



Aluminum Handle.

An attractive little Souvenir in the form of a *Nail File* will be sent to those interested in the rapid production and fine finish of riveted articles.

The above *Nail File* was riveted at the rate of 20,000 per day of 10 hours by a boy, on a *Grant Noiseless Riveter*.

The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.

Silver's 20" Drills

Eight Styles

LEVER FEED

LEVER and WHEEL FEED

POWER FEED and Automatic Stop

POWER FEED with Back Gears and Automatic Stop

Round or Square Base

Send for catalog

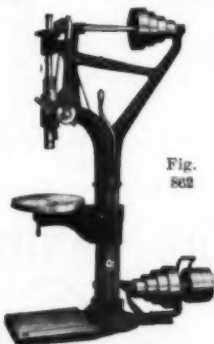
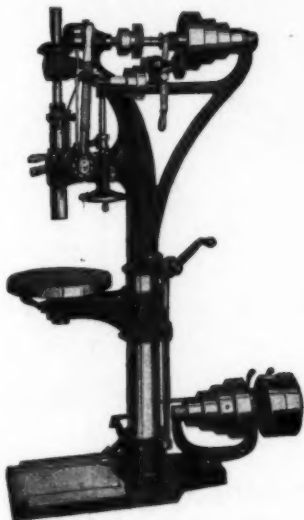


Fig.
800

The Silver Mfg. Co., 385 Broadway
SALEM, OHIO

Modern 20" Drill

Fully equipped



The best drill proposition on the market.
For repairing or manufacturing you can depend
upon it for rapid production and accuracy.
The price is attractive.

Don't overlook this, but write today.

FRONTIER IRON WORKS
Department "B"
Buffalo, N. Y.

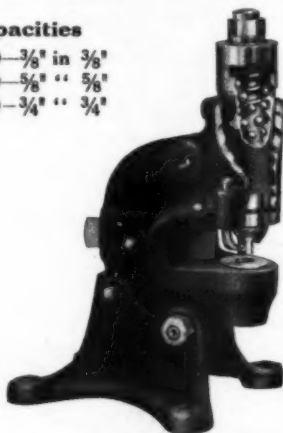
Whitney All-Ball-Bearing Portables Are The Most Powerful Hand Punches in the World

Capacities

No. 20— $\frac{3}{8}$ " in $\frac{3}{8}$ "

No. 30— $\frac{5}{8}$ " " $\frac{5}{8}$ "

No. 40— $\frac{3}{4}$ " " $\frac{3}{4}$ "



Strong and Durable

The No. 40 puts a $\frac{1}{4}$ -in. hole through $\frac{3}{4}$ -in. boiler plate with a single sweep of the hand lever.

A year's use on boiler plate and repair work has not shown a break. But—

Every part is made to standard and is easily replaced.

The working parts are rotary; the punch itself is not. And don't forget—*it's portable.*

A great tool. Write for catalog and prices

Whitney Metal Tool Co.
221 Walnut St., Rockford, Ill.

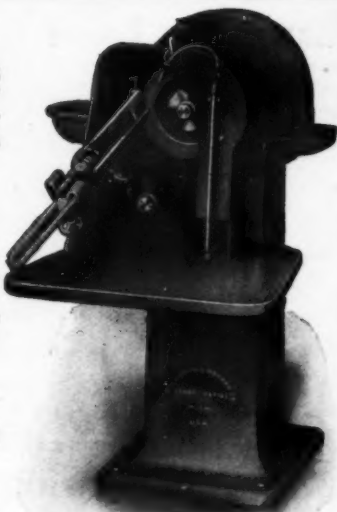
Two Machines

**Which Every
Shop Needs
For Only**

**One
Cost**

**One Floor Space
One Power Bill
One Price**

**Wet Tool
and
Drill
Grinder**



You can now get both a drill grinder and a water tool grinder in one. Two men can use the machine at the same time without either interfering with the other. Drill grinder or water tool grinder can be furnished separately where the other is already installed. We also have a line of surface grinders, cutter and reamer grinders, and the NEW YANKEE drill grinder in other combinations or plain, in endless variety to suit every condition.

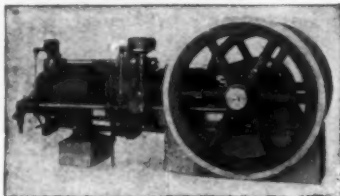
Have you gotten your free copy of the "Brief Treatise on Lathe Center Grinding" and description of the new WILMARTH & MORMAN Center Grinder? If not, get it quick. You will miss it if you don't.

New complete catalog now on the press.

Send in your name for free copy

**Wilmarth & Morman Co.
575 Canal St., Grand Rapids, Mich.**

Have You a Power Problem?



Do you
know what
you want?

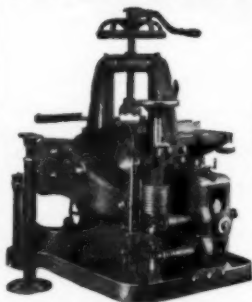
Are you
sure you
are right?

20 to 200 h. p.

OUR FREE BULLETIN No. 22 is a treatise on *Power Selection*, with tables and illustrations, written in plain United States for the busy man; and it explains how the "Show-me" Guarantee affords complete protection.

The Elyria Gas Power Co.
Elyria, Ohio

Are Your Sawing Costs Right?



If you are not sure that your metal sawing costs are at the lowest limit, it will pay you to investigate the "Lea Simplex."

We will be glad to send literature explaining why the purchase of this saw is a true economy.

LEA EQUIPMENT COMPANY
West and Cedar Sts., New York City



**250 lb.
Hammer
Belt
Driven**

Regularity of Blows

The easy action and positive control, at all times, of the Beche, insures a blow of consistent regularity, the force of which is governed wholly by will of operator, by means of foot treadle or hand lever. Whether wishing to strike light, medium or hard blows, the Beche responds instantly, without any adjustments or interruptions, and with a precision not obtainable in any other type of power hammer.

Smiths will appreciate this feature when welding or drawing out steel where an accurate blow of variable force is so essential.

The Beche also runs at a speed which enables the smith to manipulate his work in such a manner that it obtains the full benefit of each blow struck.

Beche Hammers are built in the following sizes:

Belt or Motor Driven

66 lb. 165 lb. 250 lb. 330 lb. 500 lb. 770 lb.

Write for Catalogue

Nazel Engineering & Machine Wks.

Sole Builders for United States and Canada

5th and Luzerne Sts.,

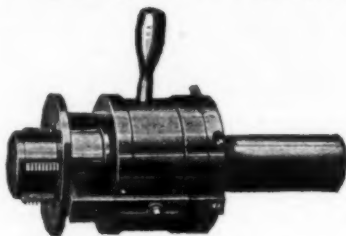
Philadelphia, Pa.

Don't Back Out!

The backing out of solid taps wastes time, injures the cutting edges of the tap, and often strips or destroys the thread.

There is no better method of tapping threads, either straight or standard pipe sizes, than the use of the

Geometric Adjustable Collapsing Taps



Fitted for operation on your Drill Press, Screw Machine, or Turret Lathe.

Adapted for tapping any line of Screw Threads of 1 in. or larger diameter.

Our Collapsing Tap Catalogue will interest you

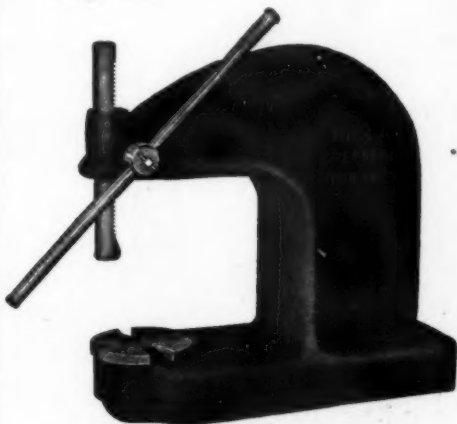
The Geometric Tool Company
New Haven, Conn.

Manufacturers

Should Make More Profit

The report of the Internal Revenue Office for this district shows that Sixty-eight Billions of Dollars engaged in manufacturing made 4.48 per cent profit.

Financial and Insurance Corporations make 15.8 per cent,



Greenerd Arbor Presses

will help machine shops to increase profits. We estimate that A Greenerd Arbor Press will show a saving of 100% per year, often more.

Edwin E. Bartlett

336 A Street,

Boston, U. S. A.

A Good New Year's Resolution

"We are going to stop using our expert mechanics for lifting and pulling, and are going to install a "Handiest Tool in the Shop" Portable Floor Crane and Hoist, a tool that will do more work—with ease—than any ten men in our shop."

Pass this Resolution, and you will **Save Money**, Time, Labor, Drudgery and Accidents.



Start
the
New
Year
Right,
and
Increase
the
1912
dividend

Write for Prices

of "The Handiest Tool in the Shop" Portable Floor Crane and Hoist.

Made by

The Canton Foundry & Machine Co.

Canton, Ohio

HYDRAULIC JACKS

offer the best means of shifting heavy objects. Our types and sizes cover a wide range of capacities and permit one man without severe effort to move any weight up to 500 tons.

Watson-Stillman Hydraulic Jacks being heavy for their rating, have a great safety factor and handle a large overload safely.



The jacks shown are excellent for use in shops, construction work and general service, and our line embraces many other shapes suitable for all lifting propositions. We modify standard construction to meet special conditions.

Tell us what jacks or other hydraulic tools you need and we will send literature.



**The
Watson-Stillman
Company**

Church & Fulton Sts., New York



\$
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Superior
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\$65.00

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\$5
F.O.B.

\$55.00
F.O.B. Kokomo, Ind.



\$55.00
F.O.B. Kokomo, Ind.

20" Square Base Wheel and Lever Feed

We have on hand for immediate delivery a number of Superior 20 inch Square Base, wheel and lever feed upright drill presses as illustrated, that have always sold at price of \$65.00 f.o.b. Kokomo, Ind.

We are redesigning this machine, making some changes in our patterns in order to build the new machine with Power feed, and back gears, and do not care to mix our stock by having on hand the same size machine in two different designs.

These machines are high grade, carefully built and equal to other machines of the same size, and are guaranteed by us the same as if sold at our regular prices.

We will ship to concerns satisfactorily rated on regular terms of 30 days net; and to those that send cash with order we allow an extra 2%. We agree to refund your money if not entirely satisfied.

If you can use one of these machines you better order at once, as our supply is limited.

*Handsome catalogue illustrating our complete line,
20 to 36 inch inclusive, upon request*

Superior Machine Tool Company
Kokomo, Indiana, U. S. A.

\$55.00
F.O.B. Kokomo, Ind.



\$55.00
F.O.B. Kokomo, Ind.

Ball Bearing Extractor

The Curtis does quick, economical work
on oily chips, shavings and waste



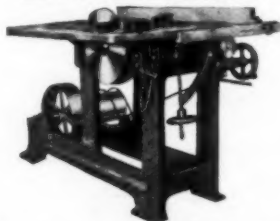
No. 400—Capacity: 2 Bushels

Let us send details—and an interesting price

Curtis Oil Extractor Company
95 Foster St., Worcester, Mass.

A Complete Line

of modern Machinery for Pattern Shops, and
all wood working plants.



See our line before buying

Jones Superior Machine Company
1726 Dickson St., Chicago, Ill.

Special Wood Working Tools

For Pattern Shops

Machines selected for their precision, and adjustability. Built like machine tools, and designed primarily for pattern shop service.

"West Side" Band Saw

Steel wheels, which can neither break, warp, twist or spring; under cut hubs; self-oiling bearings; brass-bushed loose pulley; tilting table; all adjustments made by operator without leaving his position. A band saw widely known for its superiority of design and construction.



Tannewitz Universal Double Saw Arbor

The last word in saw tables for accuracy and convenience. Gauges and adjustments for every possible requirement. A notable improvement upon a type of saw table conceded to be indispensable in every pattern shop.



Porter 20-inch Jointer

The highest grade jointer or hand planer in market. Patented guard and safety cylinder; specially grooved tables.

We outfit pattern shops complete, guaranteeing the accuracy and efficiency of every tool. Whether you want a full equipment or a single machine, you will find our service helpful.

We shall be pleased to have you consult us

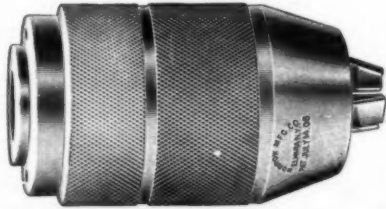
Chicago Machinery Exchange

Manufacturers' Exclusive Representatives

1219-1227 W. Washington Blvd., Chicago

Can furnish used machines, if desired, carefully rebuilt in our own shops and fully guaranteed.

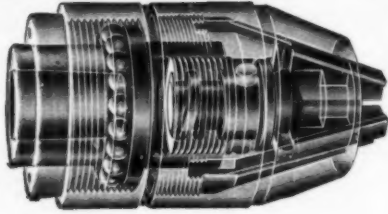
"Reduce the Time Spent on the Job"



By using

**"Morrow" hand operated drill chucks,
Try one, "And Prove it"**

Test them on the same kind of work you are using other makes of drill chucks on. "Time them both" and you will be convinced that the Morrow Drill Chuck is the greatest time and Money Saving tool of the kind you have ever used.

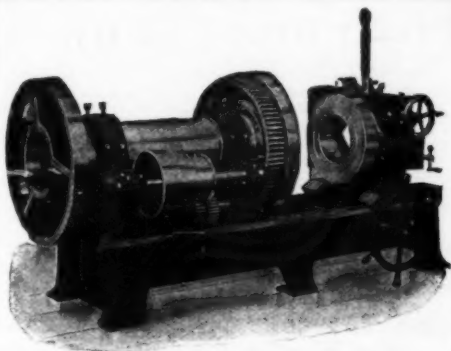


Made in five sizes

Send for Catalogue

Morrow Manufacturing Co.

Elmira, N. Y.



Peerless, P. D. Q. C. and Duplex
Power Pipe Machinery
With Peerless Adjusting Mechanism
For 1/4-in. to 18-in. Pipe

You don't have to handle them with gloves.
They are made to stand hard knocks.

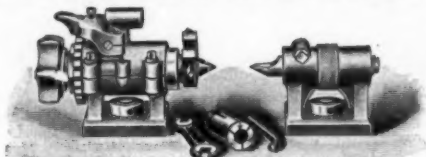
You don't have to remove a lot of screws
and plates to change dies, and waste a lot of
time when you are in a hurry. They can be
made ready quick.

Made in 17 styles and sizes, to meet the
peculiar needs of each customer.

What's yours?

Bignall & Keeler Mfg. Co.
Edwardsville, Ill.

Pretty Small Centers



but just right for a variety of work that can be done on our Bench Miller. Swing 4 in. Can make prompt shipment. *Send for Circular*

The Carter & Hakes Co. West Winsted, Conn., U. S. A.

AGENTS—Marshall & Huschart Mchry. Co., Chicago, St. Louis, Indianapolis; Motch & Merryweather Mchry. Co., Cleveland, Detroit, Cincinnati, Pittsburg; Henshaw, Bulkley & Co., San Francisco, Los Angeles, Oakland, Cal.

Burke's Bench Miller

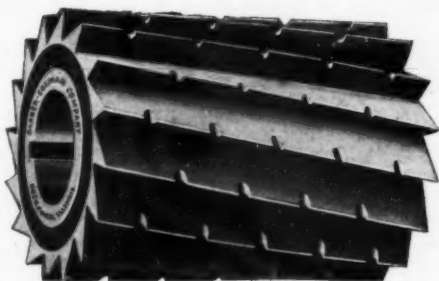


A Seasoned Tool

The tool to buy if you want extreme accuracy and permanent alignment five years hence as well as now. In making this miller the greatest care is taken thoroughly to season all castings both before and after machining. We carry these frames and parts from six to eight months after work begins on them before the final finishing is done. The result is a tool that is accurate and will stay accurate as long as you use it. For precision work it has no equal.

Longitudinal feed, 4 in.;
traverse feed, $3\frac{1}{4}$ in.; vertical
motion of knee $8\frac{1}{2}$ in.;
table surface, $3\frac{1}{2}$ x 12 inch.

Burke Mche. Tool Co.
Conneaut, Ohio



Milling Cutters

Carbon or High Speed Steel

Our cutters are designed by specialists, who have proportioned the teeth to secure the largest cutting capacity, combined with great strength and durability.

They are made by experts, working with the best equipment the market affords.

We guarantee the product absolutely.

Standard Cutters in Stock

Specials Made for Prompt Delivery

*You will find our Catalog "B" a Handy Reference Book
Sent free upon request.*

Barber-Colman Company
Rockford, Illinois

Did You Ever Compare The Strong Points Of the Morse "Rarefied" Dust Collector?

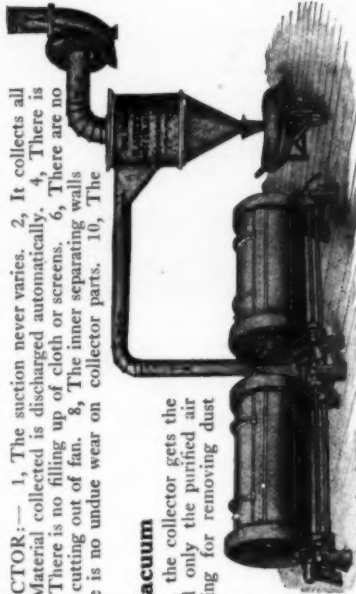
WITH THIS COLLECTOR:— 1, The suction never varies. 2, It collects all the dust heavier than air. 3, Material collected is discharged automatically. 4, There is no cleaning out by hand. 5, There is no filling up of cloth or screens. 6, There are no moving parts. 7, There is no cutting out of fan. 8, The inner separating walls are interchangeable. 9, There is no undue wear on collector parts. 10, The cost of repairs is very slight.

A Partial Vacuum

is created, the air is drawn in, the collector gets the dust (that's its business), and only the purified air reaches the fan. Just the thing for removing dust from emery wheels, polishers, tumbling mills, sand blasts, etc.

Send for Booklet and get full details

The Knickerbocker Co.,
Jackson, Mich.



It Has Made Good



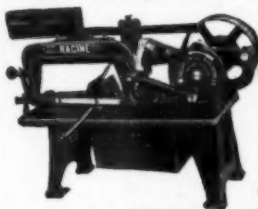
The **Jacobs Improved Drill Chuck** "Has Made Good" because it is the most shapely, compact, convenient, accurate, efficient and durable Drill Chuck obtainable. It is the embodiment of all that is essential in a first-class Drill Chuck. In a word, "It Has Made Good" because it **Is Good**.

Send for Catalogue H.

The Jacobs Manufacturing Company
32 Union Place, Hartford, Conn.

Bull - Dog Type—Eats Steel

Labor-Saving, Swift, Durable and Efficient



Cuts all Kinds and
Shapes of Material

Cuts a 6" Bar of Machinery
Steel in 20 Minutes.

Capacity 0 to 6-inch

Speed 125 R. P. M.

We also produce the
best Hack Saw Blades

Patented July 13-09

Let us demonstrate by 30 days' trial—Write for Catalog

Racine Tool & Machine Company

Racine Junction, Wis., U. S. A.

Eastern Distributors, Simplex Tool & Supply Co., Boston

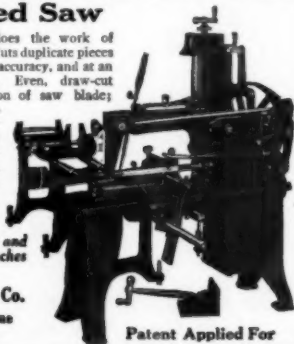
The Marvel Automatic Stock Feed High Speed Saw

A power saw that does the work of ten ordinary machines. Cuts duplicate pieces **automatically**, with great accuracy, and at an immense saving in cost. Even, draw-cut stroke; perfect lubrication of saw blade; minimum waste of material. Users like it—and order more. Cuts round steel, 1 in. $\frac{1}{4}$ min., 2 in. $2\frac{1}{2}$ min., 3 in. 5 min., 4 in. $7\frac{1}{2}$ min., 5 in. 13 min., 6 in. 24 min.

Send for descriptive circular of this machine and other Hack Saws, Punches and Shears

Armstrong-Blum Mfg. Co.

341 N. Francisco Avenue
Chicago, U. S. A.



Patent Applied For



Hack Saws cost Money.
Starrett Hack Saws last
longer. Workingmen's
time cost money. Starrett
Hack Saws cut quicker.

That is the text of the
Starrett argument. There
is no better way of realizing
the truth than to make the
test. There is a saw for
every purpose—thin brass
tubing to steel rails—for
use in hand frames, or power
machines.

*Send for catalog No. 19H.T.
and see the variety of styles.*

The L. S. Starrett Co.
Athol, Mass.

NEW YORK,
150 Chambers St.

CHICAGO,
17 N. Jefferson St.

Keyways Milled On The Drill Press



The National Keyseater assures accurate duplicate keyways. The tools are made in standard sizes most commonly used from $\frac{1}{4}$ to $3\frac{1}{2}$ in. By the use of Bushings several diameters of bores can be keywayed with one tool. They are used in hundreds of shops all over this country and abroad. The tool can be applied to any ordinary drill press.

Ask us to send you our catalog

National Machine Tool Co.

128 Longworth St., Cincinnati, Ohio



YOU can do any job on

HIGH DUTY
ROCKFORD
PUNCH PRESSES

within their capacity and they will do it as fast as it's safe to work dies.

Let us explain

Rockford Iron Works

Rockford, Illinois

A Penny Saved Is a Penny Earned

That Means Dividends

**WASH
THE
WASTE**

**And
Use Again**



**SAVE
THE
OIL**

**To Oil
Some More**

This is the Machine

American Tool & Machine Co.

**Incorporated 1864
Boston, Mass.**



JUNK

Men do not get the caps
Of Tucker's Positive Lock
Compression Grease Cups
They Won't Jar Off

For Automobiles and all
kinds of machinery having ex-
cessive vibration. Sample sent
by mail on receipt of cash, check
or money order.

Made in three sizes

		Price
No. 000	$\frac{1}{4}$ in. $\frac{1}{2}$ in. pipe	\$0.30
No. 00	$\frac{1}{2}$ in. $\frac{3}{4}$ in. pipe	0.40
No. 0	$\frac{3}{4}$ in. $1\frac{1}{2}$ in. pipe	0.50

PATENTED JANUARY 11, 1910

Tucker's Oil Hole Covers

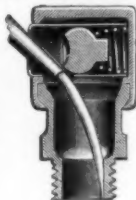


Style C, Self Closing



No. 5 Style B

Self Closing



Style A

Note the indent of ball valve on styles B & C



Send for Catalogue of full line of Covers for
all kinds of machinery having oil holes

W. C. & F. C. Tucker, Hartford, Conn.

Will It Come Back?

When your new machine is sold Will It "Stay Sold"?

Putting a new machine on the market is not always plain sailing. Costly mistakes often creep in, and because of some unnoticed defect of design or construction, the best of machines may be thrown back on the manufacturer.

Buy Our Experience

and avoid a possible boomerang. Let us do the factory work while you concentrate all your efforts on the selling end.

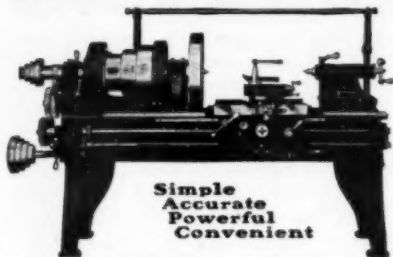
This will relieve you of all manufacturing responsibility, and at the same time enable you to conserve the capital needed for buildings, machinery and general equipment. Our highly trained organization is ready to apply its ripe experience to the making of your machine.

Among our customers you will find Uncle Sam. And having met his exacting requirements, we have confidence that we can meet yours.

We are always ready to talk things over with men who have something to make. Send us a sketch of your machine and we'll tell you exactly what we can do for you.

C. H. Cowdrey Machine Works
Fitchburg, Mass.

Standard Engine Lathes

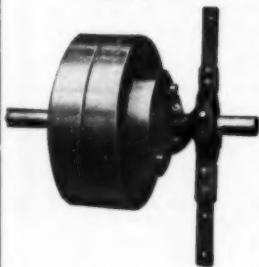


**Simple
Accurate
Powerful
Convenient**

Furnished with either standard cone or with 3-step cone double-back-geared, **carrying a wide belt**, with 18 spindle speeds and wide feed range.

GREAVES, KLUSMAN & CO.
Cincinnati, Ohio, U. S. A.

Simple and Efficient Edgemont Friction Clutches



So powerful, they will not slip, and having no springs or delicate parts, they will not cause trouble under heavy duty. The patented rim friction operates easily and quietly, releasing instantly.

Cut shows our extended sleeve type for mounting wood, iron or steel Pulleys, Gears or Sprockets on the hub.

We also make this clutch **Split** so that it can be applied to any line shaft without taking it down or disturbing any other pulley. Our counter shaft clutches have been adopted by over 30 machine tool builders.

*Tell us what you need in clutches—we'll make 'em.
Prices and information on request.*

The Edgemont Machine Co., Ft. of Mound Street,
DAYTON, O.

S

Marsh
17 S. Jeff
925 Ches



Ingersoll

30 in. Gish
34 in. Barr
No. 22 Mo
Bickford 6
40x9 in. G
1,500 Mass
16 in. x6 ft
21 in. x8 ft
28 in. Pon
We ha
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Second-Hand Machinery

FOR SALE BY

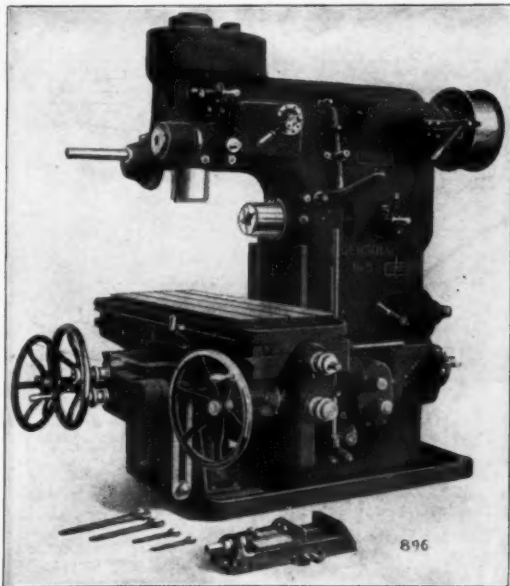
Marshall & Huschart Machinery Company

17 S. Jefferson St., Chicago.

334 N. Capitol Ave., Indianapolis.

925 Chemical Bldg., St. Louis.

418 Railway Exc., Milwaukee.



Ingersoll No. 5 Combination Vertical and Horizontal Milling Machine, with one 9", two 12" Inserted Tooth Cutters.

30 in. Gisholt Vertical Turret Mill, swings 34 in

34 in. Barnes Sliding Head Drill, positive geared feed, back gears.

No. 22 Moline Multiple Spindle Drill, capacity for 2 in. holes in steel

Bickford 6 ft. Full Universal Radial Drill, cone drive.

40x9 in. Gould & Eberhardt Gear Cutter, spur gears only.

1,500 Massillon Steam Drop, all steel frame.

16 in. x6 ft. American Lathe, three step cone, double back gears, swings 18 in.

21 in. x8 ft. LeBlond Lathe, three step cone, double back gears

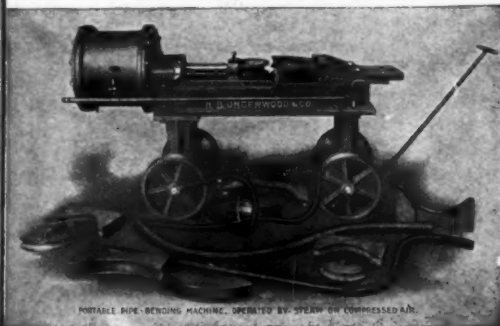
28 in. Pond Rigid Turret Lathe

We have more than two hundred second hand machines.

Send for our "Red Cross List" giving prices and full information

Our Portable Pipe Bender

**Bends any size pipe up to 2½ inches,
cold, and without filling**



Works on 80 lbs. steam or air pressure. Puts a right angle bend in a 2 in. pipe in two minutes. Does not flatten or split the pipe.

The piston is forced back by a spiral spring, so that front head and piston rod require no packing. Dies are easily changed and adjusted.

Locomotive and general repair shops will find this portable machine a great time saver, and reliable for all pipe bending requirements.

*Our Catalog tells of many time saving tools
Send for a copy*

H. B. Underwood & Company
1022 Buttonwood St., Philadelphia, Pa.

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2x24 J
12x 5
12x 6
15 in.
16x10

20 in.
24 in.

83 in.

Boring
Drill,
Drill,
Drill,
Gas en
Gas fu
Grinde
Ham

Second-Hand Machinery.

Lists of second-hand machinery, either for sale or wanted, will be published under this heading at the rate of **40 cents a line**, across the page, each issue, with a minimum charge of **\$4.00**. Sub-headings are counted as one line, but the name and address of advertiser are not included in the space charged for. Prices and full descriptions of the machines listed will be furnished by the parties offering them for sale. If you do not find what you require, use the slip inclosed with each book to make known your wants to the publisher.

FOR SALE BY

Western Machinery Co., 6th and Baymiller Sts., Cincinnati, Ohio.

Lathes, 15, from 12 in. to 44 in. swing.
Planer, 32x32 in. x10 ft. Geneva, \$300.
Planer, 42x42 in. x16 ft. Industrial, \$375.
Shapers, crank, 15-in., 16-in. and 24-in.
Other planers, shapers, drill presses, vertical boring mills, gear cutters, and turret lathes.
Large stock at low prices.
If interested in used machine tools, write for particulars and cash quotations.

FOR SALE BY

The Randle Machinery Co., 1739 Powers St., Cincinnati, O.

BOILERS.
Horiz. tubular, from 6 to 150 h. p.
Fire box, from 8 to 80 h. p.
Vertical, from 3 to 50 h. p.
ENGINES.
Corliss, from 50 to 350 h. p.
Automatic, from 150 to 180 h. p.
Throttling, from 5 to 225 h. p.
LATHES.
60 in. Stevens pulley.
15 in. x6 ft. LeBlond screw cutting.

ELECTRIC GENERATORS.
30 k. w., direct connected.
30 k. w., direct connected.
18 k. w., belted.
PLANER.
36x36 Gray.
AIR COMPRESSOR.
8x6x9 locomotive type.
BLOWER.
No. 5 Sturtevant.

MISCELLANEOUS.

Heaters, tanks, pumps, exhausters, electrical saw mill and general machinery.
Write for list. Also a full assortment of new machinery.
Sole manufacturers of the celebrated "Leader" Injectors and Jet Pumps.

FOR SALE BY

The Osborne & Sexton Machinery Co., Columbus, Ohio.

LATHES.
2x24 Jones & Lamson turret.
12x 5 hollow spdl., compound rest.
12x 6 Putnam, comp. rest, hol. spdl.
15 in. Baker turret lathe.
16x10 Mueller, cp. r., hol. spdl.
18x8, 10 & 12 Hamilton q. c., h. s., c. r.
20x8x10 Hamilton, c. r., h. s.
24x10 LeBlond, turret on shears.
24x10 Johnson, modern, heavy.
30x18 New Haven.

PLANERS AND SHAPERS.
20 in. Gould & Eberhardt.
24 in. Queen City.
24x24x6 Lodge & Davis.
48x48x30 Belmar, 4 heads.

BORING MILLS.
83 in. Johnson, single head.
8 and 9 ft. Betts, 3 heads.

MISCELLANEOUS.

Boring mches., cyl., 20 in. Barrett(2).
Drill, 24 in. Cincinnati, slid. head.
Drill, 24 ft. Fosdick plain radial.
Drill, 4 ft. Bickford plain radial.
Gas engines, 10, 15, 25 and 125 h. p.
Gas furnaces, Chicago. (2).
Grinder, surface, No. 3 B. & S.
Grinder, universal, No. 3 B. & S.
Hammers, drop, 300, 700 and 3,000 lbs.
Hammer, helve, Schultz power.
Keyseater, No. 1 W. P. Davis.
Miller, universal, No. 15 Brainard.
Pipe machine, 1 to 6 in. Merrill.
Press, foot, Niagara, heavy.
Presses, foot, No. 1 Consol. (5).
Press, No. 3 Rockford, inc.
Tapping mches., Webster & P., (2).

SECOND-HAND MACHINERY

FOR SALE BY

J. J. McCabe,

30 Church St., New York City.

UPRIGHT BORING MILL, 14-20 FT.

Niles Tool Wks. extension modern-style dbl.-hd. upright boring and turning mill, 14 & 20 ft. swing, with direct-connected motor drive, with controller and everything complete, in A-1 condition; still in operation in shop and can be inspected at any time; low price to move quick.

LARGE TOOLS.

A splendid showing of high-grade large tools in the large, well-equipped, modern machine-shop outfit we are now selling out:-

- Boring mill, vert., 10 ft. Niles, 2 heads, heavy pattern, wt. about 50,000 lbs.
- Boring mill, vert., 7-ft. Sellers, 2 heads, heavy pattern.
- Boring mill, horiz., Niles, heavy pattern, dbl. column, with floor-plate 16x8 ft., spindle 3 in., practically new.
- Boring, drilling and milling machine, horiz., Beaman & Smith, floor type, 3 in. spindle.
- Lathe, 72 in. x27 ft. Niles, tr. gd., stand. pattern, comp. rest, power cross and angular feeds, ex. heavy, for severest duty, good as new.
- Lathe, 56 in. x16 ft. Putnam, triple geared, compound rest.
- Lathe, 54 in. x21 ft. Fitchburg, tr. gd., comp. rest, blocks to 70 in.
- Lathe, 52 in. x28 ft. Niles, tr. gd., comp. rest, ex. heavy, for severest duty.
- Lathe, 50 in. x32 ft. Putnam, triple gd., compound rest, extra heavy.
- Lathe, 48 in. x24 ft. Fitchburg, triple gd., compound rest, blocks to 66 in.
- Lathe, 26-48 in. x14 ft. J. J. McCabe, dbl. spdl., triple gd., heavy pattern.
- Milling machine, planer type, Newton, 34 in. x11 ft. table.
- Milling machine, planer type, Niles, 30 in. x9 ft. table.
- Milling machine, planer type, Bement, 24 in. x12 ft. table.
- Planer, 72x72 in. x26 ft. Sellers, spiral geared, 4 heads, heavy pattern.
- Planer, 54x42 in. x12 ft. Pond, 3 heads.
- Planer, 48x48 in. x12 ft. Niles-Bement-Pond, spur gd., 2 hds., heavy pattern.
- Planer, open side, 48 in. x10 ft., Detrick & H., 1 rail and 1 side head.
- Radial drill, half-universal, Bement, 7-ft. arm, weight 15,000 lbs.
- Radial drill, full-universal, Niles, 5-ft. arm, heavy pattern.
- Radial drill, plain, Prentice Bros., 5½ ft. arm, heavy pattern, wt. 7,500 lbs.
- Slotter, Sellers, 16 in. stroke, all automatic feeds.
- Slotter, Bement, 13 in. stroke, all automatic feeds.
- Steam hammer, Sellers, double frame, 4,000 lbs.
- Steam hammer, Bement, double frame, 2,500 lbs.
- Turret lathe, "Gisholt type" American, 32 in., with chuck and tools.
- Turret lathe, "Gisholt type" American, 27 in., with chuck and tools.
- Turret lathe, Gisholt, 24 in., 4½ in. hole in spindle, 2 carriages.

The large tools shown above, as well as those in the following list, are offered at McCabe's low prices, which are important to you. Some of our other tools are detailed below:

LATHES.

- | | |
|---|-------------------------------|
| 84 in. face plate tr. gd. pit lathe. | 30 in. x17 ft. Pond. |
| 72 in. face plate tr. gd. pit lathe. | 30 in. x15 ft. Sellers. |
| 72 in. gap lathe, 18 ft. bed. | 28 in. x15 ft. Worcester. |
| 48 in. x12 ft. triple grd. Harrington. | 27 in. x16 ft. Lathe & Morse. |
| 44 in. facing lathe, Gould & Eber. | 26 in. x12 ft. Blaisdell. |
| 42 in. x22 ft. Putnam. | 26 in. x10 ft. Putnam. |
| 42 in. x16 ft. triple geared, Ames. | 25 in. x12 ft. Harrington. |
| 38 in. x21 ft. New Haven. | 22 in. x10 ft. Harrington. |
| 38 in. x16 ft. Putnam. | 22 in. x 8 ft. Putnam. |
| 34 in. x18 ft. Putnam. | 20 in. x20 ft. Worcester. |
| 34 in. x 8 ft. Johnson. | 20 in. x 8 ft. Pond. |
| 33 in. x14 ft. triple geared, Johnson. | 18 in. x 8 ft. Reed. |
| 32 in. x15 ft. Pond, raising blks. to 40" | 17 in. x10 ft. Putnam. |
| 32 in. x14 ft. Harrington. | 14 in. x 6 ft. Reed. |
| 32 in. x13 ft. Pond. | 10 in. x 4 ft. Reed. |

TURRET LATHES.

- 2x24 in. Jones & Lamson, full equipment.
- 2x24 in. Jones & Lamson, without tools.
- 18 in. swing, 29-16 in. hole, friction head, Dreses.
- 18 in. swing brass lathe, chasing attachment, American.
- 16 in. swing 2½ in. wire-feed screw machine, Pratt & Whitney.

Plain
Manuf.
Vertica
Lincol
Planer
Valve

16 in. st
13 in. st

4000 lb.
3500 lb.
2500 lb.

30 in. sp
26 in. sp
24 in. p

79 in. sv
42 in. sv
68 in. qu
10 in. ax
Rod pla

8 ft. Hy
pacity

6 ft. Hy
compi

6 ft. Hy
withou

10 ft. Be
heavy

10 ft. Be
Hilles

48 in. x7
42 in. x14

37 in. x26
36 in. x12

36 in. x11
36 in. x10

36 in. x10
36 in. x 8

32 in. x 8
30 in. x10

10 ft. 21
7 ft. 11

4 ft. 21
3½ ft. 21

threadi
HO

3 in. ba
24 in. ba

er supp
24 in. ba

er supp
7 ft. arm

15,000 l
5½ ft. arm

lbs., Pa
5 ft. arm,

SECOND-HAND MACHINERY

J. J. McCabe—Continued.

MILLING MACHINES.

Plain large size, table 60 in., all automatic feeds, Bement.
Manufacturers' style, table 58 in., wt. 4000, Newton.
Vertical, table 53x16 in., wt. 4500, Brown & Sharpe.
Lincoln style, table 28x7½ in., Garvin.
Planer type, 22 in.x3 ft., Lugersoll.
Valve miller, for valves and brass work.

SLOTTERS.

16 in. stroke, all auto feeds, Bement.
13 in. stroke, all auto feeds, Bement.

STEAM HAMMERS.

4000 lb. dble. frame, Sellers.
3500 lb. dble. frame, Bement.
2500 lb. dble. frame, Bement.

GEAR CUTTERS.

30 in. spur, Gould & Eberhardt.
26 in. spur, Brown & Sharpe.
24 in. planer for bevels, Gleason.

RAILROAD TOOLS.

79 in. swing driving wheel lathe, dble hd., quartering attach., Bement-Miles.
42 in. swing car-wheel lathe, double head, Bement.
68 in. quartering machine, Bement.
10 in. axle and centering machine, double head, Bement.
Rod planer, 27 in.x11 ft., Bement-Miles.

BOILER SHOP TOOLS.

8 ft. Hydraulic riveting machine, capacity 1½ in., Morgan.
6 ft. Hydraulic riveting machine, complete, Bement-Miles.
6 ft. Hydraulic riveting machine, without accumulator.
10 ft. Bending rolls, hinged housing, heavy pattern, Bement.
10 ft. Bending rolls, lighter pattern, Hilles & Jones.

PLANERS.

48 in.x7½ ft. Sellers, 1 head.
42 in.x14 ft. Pond, 1 head.
37 in.x26 ft. Niles, 2 heads.
36 in.x12 ft. Gray, 2 heads.
36 in.x11 ft. Sellers, 2 heads.
36 in.x10 ft. Bement-Miles, 2 heads.
36 in.x10 ft. Pond, 1 head.
36 in.x 8 ft. Pond, 2 heads.
36 in.x 8 ft. Pond, 1 head.
32 in.x 8 ft. Pond, 2 heads.
30 in.x10 ft. Gray, 2 heads.

UPRIGHT BORING MILLS.

10 ft. 2 heads, Pond, belt driven.
7 ft. 1 head, Bement.
4 ft. 2 heads Baush.
3½ ft. 2 heads, (1 turret) Bullard, threading attach., belt driven.

HORIZONTAL BORING AND DRILLING MACHINES.

3 in. bar "knee type" Newark.
2½ in. bar "knee type" Bement, outer support.
2½ in. bar "knee type" Bement, outer support.

RADIAL DRILLS.

7 ft. arm, half universal, heavy, wt. 15,000 lbs., Bement.
5½ ft. arm, plain, heavy, weight 7,500 lbs., Prentice Bros.
5 ft. arm, full universal, Niles.

5 ft. arm, pl., heavy, Prentice Bros.
4 ft. arm, pl., spd. bx, Prentice Bros.
4 ft. arm, half universal, Niles Co.
3 ft. arm, plain, Betts Co.

SECOND-HAND MACHINERY

FOR SALE BY

Joseph T. Ryerson & Son, - 16th and Rockwell Sts., Chicago

POWER PUNCHES.

Item.

- H618 Fisher coping and notching machine.
H661 Geo. C. Keene 36 in. mult. punch, cap. thirty $\frac{3}{4}$ in. holes in 3-16 in.
H287 Cleveland 90 in. mul. punch, cap. thirty 13-16 in. holes in $\frac{3}{4}$ in.
H498 Royersford double end, 7 $\frac{1}{2}$ in. throat; punch $\frac{3}{4}$ in.; shear 6x $\frac{1}{2}$ in.
H613 Long & Allstatter 15 in. throat, cap. $\frac{1}{2}$ in.

POWER SHEARS.

- H291 Cleveland 10 ft. gate shear, 36 in. gap, capacity 3-16 in.; motor drive.
H 59 H. Pels & Co. Johns beam shear; cap. 12 in. 35-lb. beams; belt drive.
H504 H. Pels & Co., Johns T 40 beam shear; capacity 15 in., 60-lb. beams.
H593 Lennox circle shears; cuts $\frac{1}{2}$ in. heads, 42 in. diameter.
H601 Thompson stroke type, bevel shears, cap. $\frac{1}{2}$ in. plate.

PLANERS.

- | | |
|---------------------------------------|--|
| H215 Gray, 36x36x10, 2 hds.; motor. | H167 Sellers, 42x42x6 $\frac{1}{2}$, 2 hds.; b. dr. |
| H158 Pond, 36x36x6, 1 hd.; belt d. | H169 Sellers, 42x42x8 $\frac{1}{2}$, 2 hds.; b. dr. |
| H163 Sellers, 36x36x7, 1 hd.; belt d. | H664 Pond, 36x36x10, 2 hds.; b. dr. |

LATHES.

- H641 Fay & Scott 18x8, friction head, turret on shear.
H663 Fiheld 52x16, solid sp.; comp. rest.
H506 Gisholt 28 in. turret, 3 $\frac{1}{2}$ in. hole in spindle.
H507 Gisholt 34 in. turret, 4 $\frac{1}{2}$ in. hole in spindle.
H234 Hendey, 18x10, quick change gear, hollow spindle; com. rest; p. c. f.
H652 Lodge & Davis, 18x9, hollow sp.; comp. rest.
H595 Rahu-Carpenter, 20x10, taper attachment, hollow spindle, comp. rest.

DRILLS.

- | | |
|--------------------------------------|----------------------------------|
| H516 Barnes, 26 in. adj. head. | H651 Hamilton, 36 in. adj. head. |
| H610 Dallett No 3, port. rope drive. | H517 Snyder, 26 in. adj. head. |

SHAPERS.

- | | |
|-----------------------------------|---------------------------------------|
| H511 Hendey 15 in., friction. | H645 Pedrick & Ayer, 15 in. trav. hd. |
| H512 Smith & Mills, 15 in. crank. | H648 Kelley, 16 in. crank. |
| H513 Flather, 14 in. crank. | H704 Cincinnati, 24 in. crank. |

PNEUMATIC RIVETERS.

- H605 Albree toggle, 26 in. reach, capacity 1 in. rivets.
H493 Allen 17 $\frac{1}{2}$ in. reach, 15 in. gap, cap. 1 in. rivets.
H612 Allen 36 in. reach, 20 in. gap, cap. 1 $\frac{1}{2}$ in. rivets.
H621 Chicago Pneu. Tool 12 in. reach, 15 in. gap, cap. $\frac{3}{4}$ in. rivets.
H491 Hanna patented lever; 25 in. reach; 15 in. gap; capacity $\frac{3}{4}$ in. rivets.

COMPRESSORS.

- | | |
|------------------------|-----------------------------------|
| H620 Bury 8x8, belted. | H603 Chgo. Pneu. Tool 8x8 belted. |
|------------------------|-----------------------------------|

MILLING MACHINES.

- | | |
|---|--|
| H637 W.R. Eynon No. 1 $\frac{1}{2}$, univer-
sal, index head. | H636 Garvin No. 4 plain, 3 feeds.
H658 Lincoln type, 6x26 in. |
|---|--|

MISCELLANEOUS.

- H670 Bolt cutter, 1 $\frac{1}{2}$ in. Putnam.
H213 Boring and drilling machine, horizontal, 4x27x60 in., Beaman & Smith.
H609 Cold saw, No. 18 Wagner, 16 in. diameter blade.
H672 Cutting-off machine, 3 in. Hurlburt & Rogers.
H649 Milling head for planer, Adams No. 2.
H486 Planer, plain rotary, 26 in. head, No. 1 Newton, arranged for motor.
H646 Press, geared, American Can Co. No. 4B.
H208 Profiling machine, No. 2 Pratt & Whitney.
H647 Screw machine, hand, $\frac{1}{2}$ in. Pratt & Whitney.
H541 Screw machine, 1 in. Cleveland automatic.
H538 Screw machine, 2 in. Cleveland automatic.
H623 Tapping machine, No. 1 Garvin automatic.
H651 Turning, boring and forming machine, Davis 24 in.

SECOND-HAND MACHINERY

FOR SALE BY

Prentiss Tool & Supply Co., New York, Boston, Buffalo, Syracuse.

LATHES.

8 in. Rivet, bench precision.	32x10 Draper, compound rest, p. c. f., taper.
9x44 Star, plain rest, p. c. f.	32x12 Johnson, c. r., p. c. f.
14x5 Hendey, compound rest.	32x17 Bement triple geared, compound rest.
16x6 Prentice Bros., compound rest, p. c. f.	36x14 Lodge & Shipley, c. r., p. c. f.
17x6 Reed, plain rest.	36x16 Lodge & S., triple geared, comp. rest, p. c. f.
18x6 Lodge & D., compound rest, p. c. f., taper.	38x20 Fay & Scott, compound rest, power cross feed.
18x8 Lodge & Shipley, c. r., p. c. f.	40x18 Newark, triple geared.
20x6 Fay & Scott, c. r., p. c. f.	46x38 Fitchburg, triple geared.
20x10 Draper, c. r., p. c. f.	60x26 Fifield, triple geared.
21x14 Powell, c. r., p. c. f.	84x20 compound rest, power cross feed.
26x12 Fish, compound rest.	103x35 Bement, triple geared.
26x13 Fitchburg, compound rest.	16 in. x16 ft. automatic threading lathe.
27x12 Pratt & Whitney, plain rest.	60 in. Stevens pulley lathe.
28x10 Gleason, compound rest.	
28x12 Putnam, c. r., p. c. f., taper.	
30x12 Niles, c. r., p. c. f.	

MILLERS.

No. 3 Cincinnati, universal.	No. 4½ Becker, plain.
No. 2 Garvin, hand.	No. 3 Brown & Sharpe, plain.
No. 3 Cincinnati, plain.	No. 12 Brown & Sharpe, plain.
No. 4 Garvin, manufacturers type.	No. 7 Becker, Lincoln.
No. 2 LeBlond, plain.	No. 3 Brown & Sharpe, universal.

DRILLS.

Footte-Burt, high speed.	25 in. Snyder, b. g., tapping att.
Baker Bros. high speed.	36 in. Bickford radial, b. g., tap. att.
4 spindle Footte-Burt, gang.	10 spindle Gardam, adjustable.

SHAPERS.

12 in. Prentiss, crank.	20 & 24 in. Hendey, friction.
13 in. Lodge & Davis, crank.	26 in. Lodge & Davis, shifting belt.
16 in. Cincinnati, b. g.	30 in. Gould & Eberhardt.

GEAR CUTTERS.

12 in. Gould & Eberhardt, hand.	72 in. Gould & Eberhardt.
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SCREW MACHINES.

¾ in. No. 52 National-Acme, auto.	No. 3 2 in. Pratt & W., wire feed.
¾, 1, 1½ & 2 in. P. & W., auto.	No. 6 2½ in. W. & S., wire feed.
2x24 Jones & Lamson.	1x10 in. Pratt & Whitney, wire fd.
1½ in. 4-spindle Gridley.	4 in. Bardons & Oliver, wire feed.

PLANERS.

22x22x4 Powell, 1 head.	38x38x8 Gleason, 1 head.
26x26x6 Pond, 2 heads.	48x42x8 Farrell, 1 head.
33x33x8 Betts, 1 head.	48x48x15 Pond, three heads.
36x36x12 Betts, 4 heads.	15 ft. plate planer.

HAMMERS.

50 lb. Bradley, compact.	200 lb. American, steam.
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MISCELLANEOUS.

Bending rolls, 8 ft. x10 in.	Grinder, surface, Walker.
Boring mill, 38 in. Bausch.	Keyseater, No. 2 Giant.
Boring mill, 10 ft. Pond.	Pipe machine, 4 in. Saunders.
Boring mill, vert., 62 in. Bullard.	Press, No. 68 Bliss, double acting.
Dynamo, plating, 280 amperes.	Slotter, 13 in. Bement.
Engine, gasoline, 8 h. p. Fairbanks.	Slotter, 16 in. Bement, crank.
Fan, exhaust, 50 in. Buffalo.	Tumbling barrell, 30x24 Smith.
Grinder, plain, 12x42 Landis.	Welding outfit, Sanford.

SECOND-HAND MACHINERY

FOR SALE BY

C. C. Wormer Mach'ry Co., 94-96 W. Woodbridge St., Detroit, Mich.

GRINDING MACHINERY.

26 in. Diamond, small roll.
42 in. Diamond, small roll.
Valley City wet tool.
Cincinnati pl. cutter & reamer.
Pratt & Whitney cutter grinder.
Rod grinder, 11 in. swing.
Yankee, style A drill grinder.
Heald, wet twist drill grinder.

No. 1 Cincinnati, univ. cutter & r.
Gisholt water tool.
Hissey-Wolf type A, electric.
No. 2 Allen, bench, emery.
26 in. Huntington, suspended.
No. 60 Heald, cylinder.
No. 24 Landis, crank.
No. 1-J Blessey, spiral disc.

POLISHING

No. 2 Norton, dble. end on col.
No. 1 Zucker, dble. end, bench.
No. 5 Zucker, dble. end on col.
No. 2 Diamond, buffing.
No. C Diamond, belt strapping att.

LATHES.
No. 4 Vulcan, dble. end on col.
No. 7-C Diamond, polishing.
No. 3 Diamond, dble. end.
No. 3 Hanson & Van W. on column.
No. 1 Belt strapping attachment.

TAPPING MACHINES.

No. 4 St. Louis.
Brown & Sharpe horizontal.
Specialty horizontal tapper.
3 in. Woodward & R. horizontal.

Ferry single spindle auto. nut.
No. 1 Garvin, horizontal.
Ohio hand nut tapper.
No. 1 Errington tapping attach.

EXHAUSTERS AND VENTILATORS.

No. 35 "ABC" steel plate.
No. 3 Buffalo, cast iron.
50 in. Sturtevant, steel plate.
No. 35 Sturtevant, shavings.
60 in. Buffalo, steel plate.
60 in. Fuller disc fan.

No. 25 type E, steel plate.
No. 2 "ABC" cast iron.
35 in. Sturtevant, double.
70 in. Sturtevant, steel plate.
96 in. "ABC" fan.
40 in. disc fan.

KEYSEATERS.

No. 1 Davis, cap. 3/4 to 1 in.

No. O Mitts & Merrill, 7 in. stroke.

COLD SAWS.

No. 1 1/2 Paragon, high duty.
Angle power hack saw.
Quincy hack saw, 6 in. stroke.

Cochrane-Bly, cap. 4 1/2 in.
No. 2 Sterling hack saw.
West Haven hack saw, 7-in. stroke.

PRESSES.

No. 18 Holden, o. b. i.
Michigan, o. b. i., 2-in. stroke.
No. 2 Stiles & Parker, open side.
No. 31 Toledo, 4-in. stroke.
No. 56 Toledo, st. side, with out
side trimming attach., Springfield
straightening.
DG-74 Ferracute, st. side.
No. S-24 Ferracute, non geared.

No. 20 Bliss, o. b. i.
No. P-4 Ferracute, non geared.
No. 53 Fowler, fly wheel.
DG-55 Ferracute, drawing.
No. 5 plain Stiles, solid bk.
No. 7 Perkins, model I, st. side.
No. 45 Perkins, model E.
No. P-5 Ferracute, fly wheel.
No. 41P Michigan, o. b. i.

PUNCHES AND SHEARS.

Thomson boiler plate bevel shear.
1 1/2 in. stroke gd. wheel rim punch.
9-in. alligator shear.

No. 206 Niagara gd. power circle.
Blacksmith's punch, 1-in. stroke.
30-in. squaring shear.

MILLING MACHINES.

No. 4 LeBlond plain, all feeds with
vertical attachment.
Pratt & Whitney, bk. geared.
No. 50 Bement & D. plain.
No. 1 Cincinnati, plain.
Oesterlein bk. gd., plain.
No. 2 Carter & Hakes, Lincoln.
No. 24 LeBlond, plain.

No. 1 Beaman & Smith, duplex.
No. 5 Brainard.
Beaman & Smith, 2 spdl., motordr.
Pratt & Whitney, hand.
No. O Farwell, quick change.
No. 2 Davis & Egan, bk. gd.
No. 1 Leblond, plain.
No. 2 Fox hand miller.

MISCELLANEOUS.

Brake, 8 ft. Ohl, automatic.
Chucks, lathe and drill, all sizes.
Countershafts, 100 different styles
and sizes.
Furnace, No. 6 Stewart, case hard.

Furnace, gas, for heating irons.
Gear cutter, No. 11 Dwight-S.
Rivet spinner, No. 80 Grant.
Separator, Noble, magnetic.
Sprue cutter on column.

SECOND-HAND MACHINERY

FOR SALE BY

The E. L. Esley Mchy Co., 555-557 Washington Blvd., Chicago, Ill.

A partial list of used machinery for quick delivery. We have a large stock of new machine tools not listed here. If you don't find here what you want, write us, giving sizes and detail. Our stock is changing constantly and we may have what you want.

DRILLS.

4 spindle Quint turret drill.
6 spdl. No. 3 Garvin, mult., table fd.
4 spindle 20 in. W. F. & J. Barnes
gang drill, all spdls. p. f., 1 sp. b. g.
4 spindle Barnes Drill Co.'s all gd.
gang drill, b. g. and p. f.
1 spindle H. & W., h. s., sens (2).
18 in. Baker Bros. high speed (2).

26 in. W. F. & J. Barnes, sliding
head, complete; fine condition.
28 in. Hamilton, sl. hd., b. gd., p. f.
28 in. Moline, sliding head, upright.
32 in. Prentice Bros., sliding head.
25 in. Barnes sta'y hd., b. g. and p. f.
Foot-Burt 4sp. No 154, universally
adj. for auto. work, fine.

ENGINE LATHES.

14x6 Flather, compound rest.
14x6 Bradford, comp. rest.
14x6 American, plain rest.
14x7 Blaisdell, taper attachment.
15x6 Walcott, back geared, rebuilt.

16x6 Muller, hollow spindle, p. c. f.
16x6 American, c. r., late pattern.
21x10 Fifield, compound rest.
38x14 Fitchburg, c. r. & taper.
30x16 New Haven, complete.

MISCELLANEOUS LATHES.

No. 21 Garvin, plain head, Monitor,
13-16 in. hollow spindle.
14 in. Monitor, plain head, F. K.
13 in. Gisholt, standard turret, comp.

30 in. x8 ft. P. & W. pl. hd. chucking
lathe, 24 in. 4-j. chk., p. f. to t. s.
Pearson b. g. hub machine, like
turret lathe, 2½ in. h. a.

PLANERS AND SHAPERS.

Planer, 16x16x3½ Putnam, 1 head.
Planer, 24x24x6 Pease, 1 head.
Planer, 30x30x8, 1 head.

Planer, 30x30x9 Whitcomb.
Shaper, 14 in., G. & E., s. g., crank.
Shaper, 24 in., b. g., Q. City, crank.

SCREW MACHINES.

2 in. Cleveland, standard auto.
¾ in. Cleveland, plain automatic.
¾-1 in. Cleveland, automatic turret.
No. 66 Brown & S., auto., new.
No. 124 Garvin, w. f., a. c., 2 in. cap.

7-16 in. Cleveland automatic.
No. 2 Warner & S., complete.
No. 2 Foster-K., complete, (7).
No. 2 Pearson, complete, 1 1-16 in.
w. f. capacity.

MISCELLANEOUS.

Air hammer, Thor No. 89B, long
stroke.
Baling press, Champion, for baling
scrap tin or iron.
Blower, steel, No. 10 Sturtevant, 7 ft.
high, 18 in. outlet.
Bolt header, ½ in. Burdick.
Bolt pointer, 1 in. Adams.
Boring machine, 2 sp. Foot-Burt
vert. adj., for auto work, fine.
Boring mill, 30 in. Colburn, 3-j. ck.
Boring mill, 42 in. Bullard, 2 hds.,
3-j. comb. ck.
Bulldozer, No. 2 Williams-W.
Cold saw, 12 in. Burke.
Cold saw, No. 4 Keystone, 4½ in.
Cold saw, No. 14 Higley, fine order.
Cranes, portable shop, 1 & 2 ton.
Enameling oven, for gas, 6x4 ft.
Gear cutter, 24 in. Brainerd, s. & b.
Gear hobber, 12 in. No. 1 Farwell.
Gear hobbors, No. O Schuchardt &
S., nearly new, (2).
Grinder, cutter & reamer, Cincinnati.
Grinder, plain, Brown & S., 12x18 in.
Grinder, 20x3 in. Diamond, single
wheel, wet.

Grinder, cock, W. & S., single spdl.
Grinder, Greenfield, tap and die.
Hammer, steam, 1,250 lbs. Morgan,
single frame.
Hammer, Bradley, r. c. helve.
Hammers, drop, No 5 Williams-W.,
crank lift, (2).
Horizontal boring & drilling ma-
chine, Niles, 4 in. bar, very heavy.
Keyseater, No. 4 Morton, 18 in.
stroke, cap. up to 2½ in.; complete.
Miller, No. 0 B. & S. plain.
Pipe mche., 4 in. Borden, complete.
Profiler, 2 spindle, Ames, fine order.
Pulley boring machine, 36 in. Streit.
Punch and shear, No. 5 L. & A.,
dbl., 6 in. throats, ½ in.
Punch press, V. & O. double crank,
st. s. with power feed rolls, fine.
Punch press, No. 4 Niagara, inc.
Punch press, No. 31 Toledo, solid bk.
Rivet spinner, ½ in. National.
Shaft straightener, power, for 5 in.
shafts, 24 ft. long; heavy, large mch.
Splitting shear, Ferris & Miles, 24 in.
throat, 14 in. blades.
Threading mche., roll, Rudolphi & K.

SECOND-HAND MACHINERY

FOR SALE BY

**The H. A. Stocker Machinery Co., 566-72 W. Randolph St., Chicago
610 Merrill Building, Milwaukee, Wis.**

Something in this List ought to interest you. Let us know what it is.

LATHES.

10x5 P. & W. tool room outfit.
12x6 Davis (new, but reduced price).
14x6 Hamilton, compound rest.
14x6 LeBlond, good order.
15x6 Von Wyck, c. r. and chuck.
15x5 Star, chuck fitted.
16x6 Bradford, compound rest.
16x6 Davis c. r. (new, reduced price.)
16x6 L. & S., c. r., q. c. g.
16x6 Reed, c. r. and taper.
18x5 Am. Tool Wks., qk. ch. gear.

20x12 Greaves & Klusman, comp. rest, turret on shears, chuck fitted.
21x10 Bradford, comp. rest, taper attachment, fine order.
22x10 Flather, c. r. and chuck.
30x14 Fifield, compound rest.
32x16 Davis, double back gears (new, reduced in price).
39x12 Putnam, compound rest.
Bench lathe, Pratt & W., with large assortment of tools.

SHAPERS.

12 in. Walcott, crank, good order.
16 in. Queen City, new, reduced pr.
16 in. Kelley.
20 in. Cincinnati, back geared.

20 in. Fitchburg, trav. hd., 2 tables, fine condition.
22 in. Walcott, triple geared.
24 in. Hendy, triple geared.

PLANERS.

72x72x14 Niles, 4 hds, A-1 condition.
48x48x20 Belmer, 4 heads.
44x44x12 Pond, 2 heads.
40x38x14 Putnam, old style, low pr.
36x36x12 Gray, 2 heads.
30x36x14 Belmer, 2 heads.
36x36x10 Gray, 2 heads.

36x30x12 Sellers, old style, low price.
32x32x10 Gray, 2 heads.
32x32x12 Ohio, 2 heads.
30x30x8 Pond, 1 head.
30x30x12 Belmer, 2 heads.
30x30x10 Flather, 3 heads.
26x26x8 Whitcomb (new, reduced pr.)

MILLING MACHINES.

No. 6 Whitney, hand.
No. 10 Pratt & Whitney, hand.
No. 3 $\frac{1}{2}$ Waltham, bench.
No. 13 Garvin, plain.
No. 0 LeBlond, plain back geared.
No. 5 Garvin, plain back geared.

No. 1 Cincinnati, plain head, univ.
No. 2 Cincinnati pl. back geared.
No. 1-B Kearney & T. universal, fine.
No. 1 Kempsmith, b. g. universal.
No. 2 Thurston die miller.
No. 4 Becker, univ. (new, low pr.)

UPRIGHT AND RADIAL DRILLS.

2 $\frac{1}{2}$ ft. Fosdick National.
3 ft. Fosdick standard.
5 ft. arm Western, universal.
5 ft. Bickford, plain, gear box.
4 ft. Bickford, plain cone.

38 in. New H., sl. hd., bk. gr., p. fd.
35 in. Blaisdel, sl. hd., bk. gr., p. fd.
28 in. Snyder, sl. hd., bk. gr., p. fd.
25 in. Prentice Bros., sl. hd., b.g., p.f.
20 in. and smaller.

SENSITIVE DRILLS.

1 to 6 spindles, various makes.

POWER PRESSES.

No. 1 $\frac{1}{2}$ Bliss, cam drawing.
No. 3 $\frac{1}{2}$ Bliss toggle press.
Farrell reducing, 12 or 15 in. stroke.
C32 Ferracute, armature notching.
C34 Ferracute, armature notching.

No. P1 Ferracute, 1 $\frac{1}{2}$ stroke.
No. 3 American Can., o. b. i., 2 in. s.
No. 2 American Can., o. b. i., 2 in. s.
No. 2 Walsh, inclinable.
No. 3 Walsh, inclinable.

BORING MILLS—VERTICAL AND HORIZONTAL.

10 ft. Niles, 2 heads.
42 in. Bullard, 1 tur. hd., 1 swivel hd.
48 in. Colburn, pl. table, 4 chuck jaws.
53 in. Colburn, 2 heads.

Fitchburg horizontal, 36 in. swing.
34 in. Colburn, swivel turret.
No. 2 Barrett cylinder borer.
42 in. Niles car wheel borer.

CEMENT SINGLE END PUNCH AND SHEARS.

42 in. throat, capacity 4x1 $\frac{1}{2}$ in.
Humphrey sgl. end punch and shear,
36 in. throat, capacity 1 $\frac{1}{2}$ x1 in.

Cincinnati sgl. end punch and shear,
8 in. throat, capacity 4x1 in.

SCREW MACHINES.

No. 2 Pratt & Whitney.
No. 2 $\frac{1}{2}$ Pratt & Whitney.
No. 51 National-Acme automatic.

4 in. Cleveland automatic.
4 in. Cleveland automatic.

Libby
20 in.

Bolt
Bolt
Cent
Cold
Crane
Gas f
Gear
Gear

Frev
Grind
Grind
Grind
Grind
Mille
Mille
Pinio
auto

O. L.

12x5
14x6
16x6
16x6
16x6
16x8
16x8
18x10
28x12
38x8
72x22

13 in.
16 in.
20 in.

24x24

No. 1
No. 4

Band
Bevel
Bolt
Borin
Gear
Lathe
Press
Screw
Shape
Shape
Shape
Spinn

SECOND-HAND MACHINERY

H. A. Stocker—Continued.

TURRET LATHES.

Libby, geared head, fine condition. 7 smaller sizes, various makes.
20 in. Fay & Scott, universal.

MISCELLANEOUS.

Bolt cutter, 14 in. Schlenker.	Gear cutter, 34 in. Whiton, auto.
Bolt header, 4 in.	Gear cutter, 50 in. Gould & E., auto.
Centering machine, 4 in. Whiton.	Gear hobbing machine, Reynolds.
Cold saw, No. 4 Birdsboro, 6 ft. saws.	Gear hobbing machine, S. & S. worm.
Crane, 30-ton Niles, 72 ft. span.	Hammer, helve, 500 lb. Bradley.
Gas furnace, No. 1 Stewart comb.	Hydraulic press, 40 ton.
Gear cutter, 26 in. Brown & S., auto.	Hydraulic press, 100 ton with pump.
Gear cutter, 30 in. Flather.	Pipe machine, 4 in. Stoever.

FOR SALE BY

Frevert Machinery Co.,

18 Day St., New York City

Grinder, cutter, No. 1 Cincinnati, pl.	Planer, 24x24 in. x 8 ft. P. & W.
Grinder, surface, No. 2 B. & S., auto.	Press, No. 18 Bliss, inclined.
Grinder, wet tool, No. 2 Diamond.	Profiler, Garvin, 1 spindle.
Grindstone frame, on wheels, 48x6 in.	Screw mche., 13-32 in. B. & S., auto.
Miller, No. 2 Garvin Lincoln.	Screw machine., 7-16 in. Cleveland,
Miller, die, Thurston.	automatic.
Pinion and gear cutter, No. 1 Slate,	Shaper, crank, 18 in. Ohio.
automatic.	Turret lathe, 2x24 in. Jones & L.

FOR SALE BY

O. L. Packard Machinery Co., Chicago, Ill., and Milwaukee, Wis.

LATHES.

12x5 P. T. & S., compound rest.....	\$ 170.
14x6 Bradford, compound rest, taper attachment.....	200.
16x6 Lodge & Shipley, quick change gear, taper attachment.....	315.
16x6 Reed, taper attachment.....	200.
16x6 Von Wyck, compound rest, 3 step cone f. b. g.....	250.
16x8 Johnson, compound rest.....	150.
18x6 LeBlond, heavy, c. r., turret on carriage.....	450.
18x10 American, q. c. g., with 16 in. chuck, used about 30 days.....	632.
28x12 American, 2 sets raising blocks.....	750.
38x8 Harrington gap lathe.....	400.
72x22 comp. rest, with raising blocks to swing 120 in.....	1000.

DRILLS.

13 in. American, sensitive.....	\$ 32.	24 in. Sibley & Ware.....	\$100.
16 in. Prentice.....	72.	25 in. Prentice.....	170.
20 in. Prentice.....	88.		

PLANERS.

24x24x5, 2 heads on cross rail.....	\$525.	24x24x6, Hendey.....	\$300.
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MILLING MACHINES.

No. 1 Garvin universal, vertical and circular attachments.....	\$600.
No. 4 Cincinnati universal, old style.....	500.

MISCELLANEOUS.

Band saw, 20 in. Silvers.....	\$ 28.
Bevel shear, Thomson, 1 in. boiler plate.....	100.
Bolt cutter, 1 in. Acme.....	110.
Boring mill, 30 in. Bullard, full universal, 4 hole turret on spindle.....	1100.
Gear cutter, 36 in. Brainard, automatic.....	500.
Lathe, 15 in. Garvin Monitor.....	250.
Lathe, 16 in. patternmakers.....	35.
Press, No. 40 Perkins, used 30 days.....	200.
Screw machine. 4 in. P. & W., automatic.....	375.
Shaper, 18 in. Hendey, geared.....	175.
Shaper, 14 in. Steptoe, crank.....	170.
Shaper, 2 spindle, wood top, good order.....	50.
Spinning lathe, 16x5.....	45.

SECOND-HAND MACHINERY

FOR SALE BY

The Motch & Merryweather Machinery Company,
707-715 Lakeside Av., N. W., Cleveland, Ohio
Branches: Detroit, Cincinnati, Pittsburg.

Refitted Machine Tools:

BORING MILLS.

30 in. Bullard, belt feed, 3 jaw combination chuck. | 3½ in. bar, Bement-Miles horizontal.

BROACHING MACHINE.

No. 1 vertical Standard.

DRILL PRESSES—UPRIGHT.

20 in. Barnes.	28 in. Rockford, good as new.
24 in. Bickford, sliding head.	Style "F" Baker.
26 in. New Haven, sliding head, (2).	Dallet portable, (2).
26 in. New Haven, sliding head.	2-spin. Bickford, back gears, power feed, pump and tank.
28 in. Aurora, sliding head, back gear, belt feed.	6-spindle Quint turret.

DRILLS—RADIAL.

3 ft. Fosdick.	4 ft. Box, half universal.
4 ft. Fosdick.	5 ft. Pond, heavy, box table.
4 ft. Prentice plain, box table.	6 ft. Pond, heavy, box table.

GEAR CUTTERS.

26 in. Brown & Sharpe, spur gears only.	36x10 in. x 3 p., Gould & Eberhardt, vertical type, spur (4).
60 in. Gould & Eberhardt, spur gears.	48x10 in. x 3 p. Gould & Eberhardt.

GRINDERS.

No. 1½ Landis, internal.	No. 60 Heald, cylinder.
No. 3 Landis, universal, (2).	No. 2 Leland & Faulconer, wet tool.
No. 24 Landis plain, swivel head.	"A" Yankee drill grinder.
No. 11 Brown & Sharpe, plain.	

LATHES.

12x5 Young, comp. r., good as new.	20x8 Flather, 4 step cone, belt feed, compound rest.
14x6 Prentice, plain rest, taper att.	22x15 Pond, compound rest.
16x6 Flather, plain rest, taper att.	26x14 New Haven, 20 in. chuck, c. r.
18x8 Lodge & Davis, comp. rest taper att.	36x16 Pond, 4-jaw chuck, back gd.
18x8 Porter, compound rest, chuck.	36x24 New Haven, c. rest, back, gd.
18x10 Schumacher & Boye, comp r., belt feed, chuck fitted.	48x30 Niles, triple geared, comp. rest, raising blocks 54 in.

MILLING MACHINES.

No. 1 Eynon.	No. 3 Cincinnati, plain, all feed, double back geared.
No. 1½ Browne & Sharpe, plain, back geared, rack feed, (2).	No. 3 Owen, plain.
No. 2 Davis & Egan, plain, B. & S. index centers.	No. 3½ Garvin, plain.
No. 3 Cincinnati, cone type, belt feed.	24 in. Ingersoll slab miller, removable housings.
	No. 13 Brown & Sharpe, plain.

PLANERS.

10 in. Busch, crank, swivel vise.	24x24x6 Ohio, 1 head.
22x22x4 New Haven.	48x48x10 Detrick & Harvey, open side, 1 rail, 1 side head.
24x24x4 Gray, 1 head.	48x48x16 Detrick & Harvey, open side, 1 rail, 1 side head.
36x30x8 Detrick & Harvey, open side, 1 rail, 1 side head.	

PRESSES.

No. 4 Bliss, punch.	No. 2, inclinable (2).
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SHAPERS.

14 in. Lodge & Davis, sgl. gd., crank.	20 in. Hendey.
15 in. Hendey, tilting table.	20 in. Ohio, crank.
16 in. Gould & E., b. g., crank.	24 in. Gould & Eberhardt, bk. gd.
16 in. Walcott.	24 in. Hendey.
16 in. Steptoe.	24 in. Morton, draw stroke.
16 in. Flather, gear box.	26 in. Cincinnati, shifting belt.

SECOND-HAND MACHINERY

The Motch & Merryweather Machinery Co.—Continued.

TURRET LATHES.

2x24 Jones & Lamson, latest type.	44 in. Grant chucking lathe.
7x14 Potter & Johnston.	No. 1 Krauth & Benninghofen.
21 in. Gisholt.	No. 3 Pratt & W. hub forming attachment.
24 in. Lodge & Shipley screw mach.	
21 in. Gisholt.	

PUNCHES AND SHEARS.

Horizontal straightening machine, belt driven.

MISCELLANEOUS.

Belt lacer, 17 in. Peerless.	Keyseater, No. 2 Baker, latest type.
Cold saw, No. 20 Higley.	Pipe machine, 6 in. Saunders.
Hammer, 850 lb. Morgan steam.	Pipe machine, 12 in. Curtis.
Hammer, 1,200 lb. Billings & Spencer, friction board drop.	Planer, Morton portable, complete with motor.
Keyseater, 24 in. Morton.	Slotter, 8 in. Newton.

FOR SALE BY

Box 12, care A. H. Hitchcock, - 1220 Caxton Bldg., Chicago. Ill.

We have the following tools which we offer for immediate sale:

Boring mill, vertical, 42 in. Bullard, with right hand plain head, left hand swiveling turret head, geared feed and all late improvements contained in Bullard's standard mill, \$850.

Engine lathe, screw cutting, 20 in. x 10 ft. Lodge and Shipley, patent head, complete with oil pan, pump and piping, connected front and rear tool blocks, automatic multiple longitudinal stops, multiple cross stops for both front and rear rests, high duty tool blocks. \$950.

Milling machine, heavy universal, No. 3-A Brown & Sharpe, geared spindle, latest type, complete with arbor and all regular equipment, \$1,400.

Milling machine, plain, No. 4 Cincinnati, high power, motor driven, complete with 10 h. p. Triumph 220-volt direct-current motor, with controller, resistance and all electrical apparatus, \$1,450.

Milling machine, universal, No. 1-B Kearney & Trecker, geared spindle, latest type, complete with arbor, several cutters and all regular equipment, \$750.

These machines positively are in first-class condition. They have seen very little service. Some of them have been used but four or five weeks.

We offer them subject to prior sale at the price listed.

FOR SALE BY

Buffalo Tool & Supply Co., 15 W. Swan St., Buffalo, N. Y.

Band saw, 30 in., iron tilting table, very fine,	\$ 60.00.
Blower, pressure or vacuum, Lehman, capacity 160 ft.,	65.00.
Buffing stands, heavy, each,	12.50.
Cold cut-off saw, circular, 5 in. Nutter & Barnes,	85.00.
Drill press, 24 in. Hoefler, square base, sta. head, b. g., p. l., w. & l. feed, auto stop,	85.00.
Engine lathe, 16x6 Porter, hollow spindle, fair condition,	75.00.
Engine lathes, plain, 16x6 Sebastian, hol. spd., A-1 cond., (2), each,	100.00.
Engine lathes, pl., 18x6 Lodge & Barker, hol. spd., fine cond., (2), ea.	100.00.
Engine lathe, 30x12 New Haven,	175.00.
Jointer, hand, 12 in.	60.00.
Motor, 10 h. p., 60 cy., 3 phase, variable speed,	100.00.
Motor, 15 h. p., 500 v.	100.00.
Patternmakers' lathe, double end, swings 20 in., B. & M.,	35.00.
Planer, pony, 24 in. Williamsport,	90.00.
Polishing jacks, iron frame, each,	20.00.
Tube swedge, Dayton,	75.00.
Turret lathe, 21 in.	150.00.

The above items are offered for spot cash; all in good order. We want to close them out on account of lack of room.

SECOND-HAND MACHINERY

FOR SALE BY

Niles-Bement-Pond Company,

111 Broadway, New York.

Located at Chicago, Boston and New York.

SPEED LATHES

10 in.x4 ft. Washburn.

11 in.x4 ft. Wells

LATHES.

16x 4 Champion, foot power, c. r.
16x 5 Champion, foot power, c. r.
16x 5 Champion, standard, c. r.
12x 5 Davis, standard, comp. rest.
12x 5 Champion, comp. rest, taper.
12x 6 Davis, standard, comp. rest.
12x 6 Davis, quick change, c. r.
12x 6 Davis, comp. rest and taper.
13x 6 P&W, rise and fall rest, taper.
14x 5 American, square arbor.
14x 6 Davis, comp. rest.
14x 6 Davis, quick change, c. r.
14x 6 Davis, quick change, c.r., taper.
14x 6 F. B. Miles, comp. rest.

16x 6 Davis, quick change, c. r.
16x 8 Davis, standard, comp. rest.
16x 8 Davis, quick change, c. r.
18x 6 Blaisdell, rise and fall rise.
18x 8 Davis, quick change, c. r.
18x 8 Davis, comp. rest, 16 in. chuck.
18x10 Davis, standard, comp. rest.
22x12 Davis, double back geared, c.r.
22x16 Fitchburg, plain rest.
25x12 Bradford, comp. rest.
26x14 Davis, double back gears, c. r.
36x17 Pond, comp. rest, triple geared.
42x32 Putnam, triple geared, hy. pat.

TURRET MACHINERY.

3 in. No. 0 Hartford, automatic.
4 in. No. 00 Hartford, Pratt & Whitney, automatic.
8x1 in. National-Acme, 4 spindle, automatic.
5-16 in. No. 0 Hartford, Pratt & Whitney, 2 spindle, automatic.

20x26 P. & W. turn-table lathe, 230 v. motor.
3 in. No. 1 Spencer, single tur. auto.
2 x24 J. & L. flat turret.
24 in. 27 Conradson, semi-automatic.
24 in. Gisholt turret.

PLANERS AND SHAPERS.

30x30 in.x24 ft. Sellers, 3 heads.
32 in. Cincinnati rack shapers.
42 in.x8 ft. Newton rotary, motor driven.
78x72 in.x24 ft. Bement, 3 heads.

96x108 in.x17 ft. Bement.
17x17 in.x4 ft. Whitcomb.
18 in. Cincinnati dbl. hd. traverse.
24 in. Gould & Eberhardt shaper.
24x24 in.x6 ft. Powell.

MILLING MACHINES.

No. 2 Garvin, plain, 31½x5x16.
No. 2 Garvin Lincoln miller.
No. 44 Becker-Brainard, plain, 24x7x16 in.
No. 5 Becker planer, plain, 9x3x7 in.
Garvin single spindle profiler, table 21x24 in.

No. 3½ Fox plain, hand and power fd.
No. 2 Becker plain, 2 feeds.
No. 3 Becker plain, 2 feeds.
No. 4 Becker plain, 3 feeds.
No. 4 Becker plain, 1 feed.
No. 1½ Becker univ., 2 feeds.
No. 3 Becker univ., 3 feeds.

ELECTRIC

No. G ½ in. Hisey-Wolf, 110 volt, d. c.
No. H ½ in. Hisey-Wolf, 110 volt, d. c.

DRILLS.

No. 1, ½ in. Clark-Breast.

SENSITIVE

12 in. Gardam bench drill.
No. 1 16 in. Allen.

DRILLS.

No. 4, ½ in. cap Barr m.d., 110 v., d. c.
No. 5, ½ in. cap Barr m.d., 110 v., d. c.

UPRIGHT

25 in. Aurora, belt feed.
25 in. Aurora, positive geared.
22 in. Aurora, belt feed, sliding head.
28 in. Aurora, belt feed, sliding head.

DRILLS.

32 in. Aurora, belt feed, sliding head.
44 in. Aurora, belt feed, sliding head.
22 in. Aurora, pos. gd., sliding head.
30 in. Gould & Eberhardt, sl. hd.

MULTIPLE SPINDLE

6-spindle special Langelier.
3-spindle Sigourney.
10 in. 2-spindle Slate.
10 in. 3-spindle Slate.
13 in. No. 1 Hill-Clarke, 110 volt, d. c. motor.

DRILLS.

12 in. 2-spindle Foote-Burt.
14 in. 4-spindle D. P. N.
17 in. 4-spindle Jones & L., gang.
No. 10, 10-spindle Pratt & Whitney, cap. 1 15-16 in., 220 v., d. c. motor.

RADIALS.

3 ft. Mueller, speed box.
3½ ft. Mueller, speed box.
4 ft. 6 in. Barr, plain radial.

Prentiss portable universal radial, cap. 2 in.
No. 2 Union tool grinder.

WOOD WORKING MACHINERY.

20 in.x8 ft. Robins pattern makers' lathe.

SECOND-HAND MACHINERY

Niles-Bement-Pond Company—Continued.

BORING MILLS.

7 ft. Pond boring and turning mill.
Stearns 96 in. special cylinder borer.
Nicholson & Waterman boring machine, 3 in. spindle.

56 in. Niles boring and turning mill.
72 in. Weiss & King boring and turning mill.

RAILROAD MACHINERY.

Axle lathe, No. 2 Bement, double.
Axle lathe, No. 3 Putnam, double.

Axle lathe, B. & O., single.

PUNCHES AND SHEARS.

No. 1 Am. Can. Co.
No. 31 C. Perkins.

No. 45 E Perkins, geared.

TWIST DRILL GRINDERS.

No. O style "A" Washburn.
No. 2 style "B" Washburn.

No. 2 style "C" Washburn.

DISC GRINDERS.

No. 6 "E" 15 in. Gorton.

No. 18 18 in. Cook.

GRINDERS.

Globe tool sharpener, Walker.
No. 6 16 in. Diamond, complete.
No. 6 Northampton polishing jack.
No. 1 Bath, universal.
No. 3 Blount, tool.

24x3 in. Pedrick, double wet tool.
Diamond polishing stand.
No. 1, 14x14 in. Becker, cutter.
18x96 in. Norton, cylindrical.
36 in. Ingersoll, cutter.

METAL SAWS.

No. 1 Olmsted, hack.
No. 1, 3/4 in. bar, Franklin.

No. 1, 7/8 in. bar, high duty.
No. 2, 1 1/2 in. bar, high duty.

BOLT CUTTERS.

3/4 in. Standard, single.
1 in. Acme, single.
1 1/2 in. Landis, single.
1 in. Standard, single.

1 1/2 in. Plurality, single.
2 in. Reliance, single.
2 in. Acme, double.

KEYSEATERS.

30 in. Baker draw stroke slotter.

14 in. Niles slotter.

MISCELLANEOUS.

Bel lows, foot, No. 10-B.
Bicycle tube hand rolls.
Crane, 5 ton dbl. I beam, 11 1/2 ft. span.
Cut-off machine, 2 1/2 in. Betts.
Flue welder, 2 in. Ryerson.
Gas furnace, No. 1 Stewart.
Gear cutter, bevel and spur, 5 in. No. 11 Slate.
Hammer, power, 250 lb. Champion.
Iron forge, 28x13x8 ft., on legs.
Measuring machine, 24 in. Rogers.

Motor, 1 1/2 h.p. Story, var. speed, 110 v.
Pipe bender, 2 in., hand power.
Planer vise, swivel base, 10x2 in.
Planer vise, 16x3 1/2 in.
Rubber vulcanizer, Hart., small.
Saw gummer, Tolman, single wheel.
Spiral spring winding mche., Shuster.
Tapper, horiz., 3-16 in. Garvin No. 1.
Tapper, 5-16 in., No. C Burke.
Tapper, 3/4 in. Errington.

FOR SALE BY

Frank Toomey, Inc.,

127 N. Third St., Philadelphia, Pa.

HAMMERS AND RADIAL DRILLS.

600 lb. Bement Miles & Co., single frame hammer.

36 in. Morris radial drill.
48 in. Gang radial drill (2).

LATHES.

16x6 Prentice.
14-24x8 American gap lathe.
16x6 Prentice.
16x6 Davis (3).
16x8 Davis.

16x8 Bradford quick change gear.
20x10 Rahn-Carpenter gap lathe.
24x14 Rahn-Carpenter.
48x20 triple-geared, raising blocks to 56 in.

MISCELLANEOUS.

Grinders, oscillating surface, Springfield No. 5 (2).
Millers, No. 2 Van Norman duplex (2).
Miller, slab, 36 in. x 12 ft., heavy.
Miller, vertical, No. 22 Garvin.
Miller, No. 2 Cin'ti univ., vert. att.

Miller, plain, No. 5B Brown & Sharpe heavy duty, vertical att.
Press, PG-5 Ferracute.
Shaper, 26 in. Gould & Eberhardt.
Turret lathes, No. 14 Garvin (2).

SECOND-HAND MACHINERY

FOR SALE BY

Chas. A. Strelinger & Co., Bates & Congress Sts., Detroit, Mich.

LATHES.

12x5 Reed, rise & fall rest.	20x8 Rahn-Carpenter, gap.
16x8 Walcott & Wood, geared feed.	24x10 American, heavy pattern.
18x8 Schumacher & Boye, with ck.	36x18 American, triple geared.

SCREW MACHINES AND TURRET LATHES.

No. 3 Foster-Kimball, complete.	3x26 Jones & L. chucking equipment.
No. 53 National-Acme automatic.	14 in. plain head Foster-Kimball.

MILLING MACHINES.

No. 26 Becker, plain.	No. 3 Owen, plain.
No. 2 Kempsmith, universal.	

DRILLS.

24 in. Rockford, with tapping att.	22½ in. Kern, with tapping att.
4 sp. gang, 23 in. Rockford.	

PLANERS AND SHAPERS.

24 in. x6 ft. American.	16 in. Lutter & Gies shaper, swivel table.
36x36 in. x12 ft. Whitcomb, motor dr.	

MISCELLANEOUS.

Gear hobber, No. 2 Rhenania.	Ripsaw, circular, 30 in. Fay & Scott.
Grinder, internal, Landis.	Spinning lathe, 15 in. Schultz.
Grinder, surface, No. 2 Brown & S.	Steel cutter, high speed, Slack.
Grinder, wet tool, 14 in. Valley City.	Wood trimmers, Fox universal, (2).

FOR SALE BY

A. D. White Machinery Co., 108-114 N. Jefferson St., Chicago.

LATHES.

14x6 Fay & Scott, taper att.	18x12 Barker, shopworn.
15x6 Blaisdell, cheap.	20x10 Fay & Scott, c. r.
16x8 Blaisdell.	21x12 Davis & Egan, c. r.
18x8 Lodge & Davis, ck.	30x10 Powell, fine condition.

DRILLS.

3 spindle Baker.	30 in. Kerkhoff, sliding head.
24 in. Blaisdell.	30 in. Bickford, sliding head.
28 in. Bickford, sliding head, (4).	32 in. Bickford, sliding head.
28 in. Aurora, sliding head.	3 ft. Bickford radial, cheap.

PLANERS.

24x 6 Gray, 1 head (2).	28x 8 Gray, 1 head (2).
24x 6 Pond, 1 head.	32x8 Betts, 1 head.
25x 6 Sellers, spiral drive.	36x10 Gray, 2 heads.
26x 6 Gray, 1 head.	36x12 Cincinnati, 2 heads.
26x 9 Gray, 1 head (2).	28x10 Gray, 1 head, fine.
26x10 Gray, 1 head.	52x25 Betts, 1 head.

SCREW MACHINES AND TURRET LATHES.

16 in. No. 3 Pearson screw machine.	13 in. Dreeses turret lathe.
No. 2½ Pratt & Whitney sc. mche.	16x5 Flather turret lathe.
No. 3 Pratt & Whitney sc. mche.	18 in. Dreeses turret lathe.
1 in. Cleveland, automatic.	18 in. D. & E. fr. hd., 2 step cone.
1 in. Pratt & Whitney, automatic (4).	54 in. belt turret lathe.
1 in. Cleveland, semi automatic.	

PUNCH PRESSES.

No. 9 Cady.	No. 57 Toledo trimming press.
No. 4 Stiles & Parker incl.	No. 19 Bliss inc., (2).
No. 12 Wold, open back.	

MISCELLANEOUS.

Die slotter, Garvin, like new.	Keyseater, No. 2 Catlin.
Grinder, cutter, H. G. Barr.	Keyseater, 16 in. Morton.
Grinder, surface, 8x18 in.	Miller, No. 9 Owen, slotting att.
Hammer, power 35 lb. Justice.	Miller, No. 2 Garvin Lincoln.
Hammer, power, 50 lb. Dienelt.	Pipemachine, 6 in. Curtis.
Hammer, drop, 280 lb. Norton.	Shaper, 16 in. Smith & Mills.
Hammer, 2,000 lb. American.	Shaper, 18 in. Henderson, b. g.

For other bargains, and prices, get our "Yellow Book." It costs you nothing, and can save you time and money.

SECOND-HAND MACHINERY

FOR SALE BY

Aumen Mach'ry & Supply Co., 324 N. Holliday St., Baltimore, Md.

ENGINE LATHES,

Twelve 14 in. x 6 ft. Reed, new, with compound rest. Have never been used.
Special low price.

MISCELLANEOUS.

Cupola blower, No. 5 Sturtevant noiseless, equal to new.
Plate and rod hand shears, No. 1 Niagara, new, shears $\frac{1}{2}$ in., cuts bars $\frac{1}{2}$ x 3 in.
Wet tool grinders, No. 1 Diamond, 14x2 in. wheels, complete, in fine condition, (2).

FOR SALE BY

Rumely-Wachs Machinery Co., 121 N. Jefferson St., Chicago, Ill.

LATHES.

11x4 Barnes.	20x30x8 Harrington gap lathe.
14x6 Perkins.	20x8 Fifield.
14x6 Sebastian, with turret.	20x8 Hamilton.
14x6 Silk.	20x10 LeBlond, quick change gear.
14x6 Goddard.	20x10 Reed.
14x8 Springfield, motor driven.	21x10 Lodge & Davis.
16x6 Porter.	24x8 Putnam.
16x6 Lodge & S., quick change gear.	24x10 LeBlond, standard.
16x6 LeBlond, standard.	24x10 LeBlond, quick change gear.
16x8 Fitchburg.	25x12 Fitchburg.
16x10 Blaisdell.	28x12 Reed.
18x8 LeBlond, quick change gear.	36x14 Fifield.
18x10 Blaisdell.	38x16 Fifield.

DRILLS.

4 spindle National, turret.	24 in. Aurora, sliding hd., complete.
18 in. Baker Bros.	24 in. Putnam.
20 in. Barnes.	

PLANERS.

16 in. Lathe & Morse crank planer.	22x22x5 Wheeler.
22x14x4 Pratt & Whitney.	30x30x8 Putnam.

TURRET

No. 2 Garvin, 1 7-16 in. capacity.	21 in. Gisholt.
18 in. American.	24 in. American.
18 in. x6 ft. Fox, square arbor.	

BORING MILLS.

Niles, 2 $\frac{1}{2}$ in. bar, 4 ft. table.	42 in. Bullard vertical boring and drilling mill.
Fitchburg, 3 in. bar, 5 ft. table.	

MILLERS.

No. 1 Pratt & Whitney, power.	No. 16 Garvin, plain.
No. 1 $\frac{1}{2}$ LeBlond, plain.	

SHAPERS.

16 in. Acme back geared crank.	20 in. Rockford back geared crank.
18 in. Walcott.	22 in. Walcott.

GRINDERS.

No. 2 Landis, universal, 12x30 in.	Gisholt, universal tool.
No. 20 Landis, plain, 10x20 in.	Washburn, twist drill.
No. 22 Landis, plain, 12x32 in.	Wells, cutter and reamer.
18x96 in. Landis, plain.	Dwight Slate, cutter.

PUNCH PRESSES AND SHEARS.

No. 0 Walsh, open back, inclinable.	20 in. foot squaring shear.
No. 18 Bliss, open back, inclinable.	22 in. Toledo power squaring shear.
No. 19 Bliss, open back, inclinable.	30 in. Peck, S. & W. squaring shr.
No. 5 Aurora hand punch.	No. 381 Toledo rotary splitting shear, motor drive.
No. 15 Buffalo ind. hand punch.	

MISCELLANEOUS.

Blower, No. 0 Garden City.	Pipe machine, 4 in. Bignall & K.
Blower, No. 5 Sturtevant.	Pipe machine, 8 in. E. C. & B.
Blower, power, Roots Acme.	Saw table, Colburn.
Drop press, 75-lb Williams-White.	Screw machine, auto., $\frac{1}{2}$ in. Brown & Sharpe.
Hammer, steam, 400-lb. American.	Thread rolling machine, 2 in. Acme.
Keyseater, No. 2 Baker Bros.	

SECOND-HAND MACHINERY

FOR SALE BY

The Lake Erie Nail & Supply Co.,

408-412 Frankfort Ave., N. W.

Cleveland, Ohio

LATHES.

13 $\frac{1}{2}$ x6 Miami Valley, c. r., h. spdl. (2).
16x8 Monarch, comp. rest, h. spindle.
16x6 Pratt & Whitney, c. r., h. spdl.
16x8 Fay & Scott, comp. rest, hollow spindle, & chuck.

18x8 Fay & Scott, c. r., h. spdl., chuck, turret on shears.
18x8 Draper, comp. rest, h. spindle.
25x12 Bradford, c. r., h. spdl. & chuck.
26x14 Gleason, compound rest.

TURRET LATHES.

3 in. Bardon & Oliver, automatic chuck and wire feed.
1 $\frac{1}{2}$ in. Bardon & Oliver, automatic chuck and wire feed.
1 in. Cleveland, automatic screw machine.

DRILLS.

24 in. Sibley & Ware, sliding head.
3 spindle, Henry & Wright.

2 $\frac{1}{2}$ ft. Gang radial drill, tapping attachment.

MILLING MACHINES.

No. 20 Oesterlein, plain.
No. 20 Oesterlein, universal.
No. 25 Oesterlein, univ., all auto. fds.

No. 24 Oesterlein, plain, all automatic feeds.
No. 3 $\frac{1}{2}$ Fox, vise and dividing head.

SHAPERS.

15 in. Niles crank shaper, back gd.
18 in. Barker crank shaper, bk. gd.

24 in. Rockford crank shaper, bk. gd.

PLANERS.

22x22x4 ft. Pond.
24x24x6 ft. Pond, one head.

33x33x10 ft. Ohio, 2 heads.

MISCELLANEOUS.

Bolt cutter, 2 in. Landis, with dies.
Gear cutter, automatic, Gould & E.
Grinder, universal, No. 1 $\frac{1}{2}$ Landis, magnetic chuck.

Hack saw, No. 2 Victor.
Punch press, No. 3 Stiles, back gd.
Trimmer, No. 3A Fox.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

210-212 Washington Ave.

St. Louis, Mo.

LATHES.

16x 6 Reed.
18x 8 Flather.
12x12 Putnam.

28x18 Putnam.
36x12 in fair condition.
48x40 column facing.

DRILLS.

10 in. column facing.
26 in. Pond, sliding head.

4 ft. arm plain radial.
4 ft. arm Bickford.

PLANERS.

22x22x5 Ames.

36x36x14 Detrick & Harvey.

GASOLINE ENGINES.

28 h. p. Fairbanks-Morse.

32 h. p. Fairbanks-Morse.

AIR COMPRESSORS.

8x 8 Curtis, belt driven.
10x10 belted.
10x12 Curtis, belted.
8x8x8 Gardner, steam driven.

960 cu. ft., steam driven.
9 $\frac{1}{2}$ in. Westinghouse, steam driven.
10x10x10 Ingersoll, steam driven.
12x14x12 Smith-Vaile, steam driven.

STEAM PUMPS.

14x12x18 Gordon duplex.
23x14x24 Dean duplex.

12 & 18 $\frac{1}{2}$ x12x10 Worthington, (2).
16 & 26x12x18 Gordon compound.

MISCELLANEOUS.

Blower, No. 10 Buffalo.
Bolt cutter, 1 in. Wells.
Bolt cutter, 3 $\frac{1}{2}$ in., quick opening hd.
Bolt header, 1 in.
Boring mill, vertical, 4 ft.
Grinder, twist drill, American.
Hammer, strap, 30 lb. Bradley.
Hammer, 90 lb. Justice.

Hammer, vacuum, 80 lb. Yeakley.
Hammer, 400 lb. Yeakley.
Keyway cutter, No. 6 Morton.
Miller, universal, No. 1 Brown & S.
Motor, 15 h. p., single phase.
Punch, single, 8 in. throat, 4 in. &.
Splitting shear, 48 in., cap. 1 in. plate.
Tube cutter, 2 in., rotary.

SECOND-HAND MACHINERY

FOR SALE BY

International Watch Co.,

Jersey City, N. J.

List from E. Bunzl, Treas., 312-315 Broadway, New York.

Blower, No. 6 Stillwell.

Buffing plant.

Drill presses, bench.

Lathes—Sloan pinion, staff, buffing, case, bench, spring, and watchmakers.

Spring winding machine.

Stud and pin machine, Hartford.

Wheel and gear cutters, Sloan & Chase.

Wigwags, and other machinery.

Prices ridiculously low.

FOR SALE BY

Union Foundry Co.,

Fitchburg, Mass.

FOUNDRY CRANES.

Two 6-ton wooden foundry cranes, both 15 ft. mast, one about 14 ft. and one about 16 ft. swing; carriage runs out about two-thirds of swing; have lifted up to nine tons repeatedly on the 14 ft. swing. Built in our own shop with timbers of best quality hard pine, double braced, at cost of \$600 each. We offer them in good condition at a bargain for \$200 and \$250 cash, f. o. b. Fitchburg. The \$250 crane we recently built over with split babitted bearings. Can replace castings at any time. Blue prints furnished to interested parties.

These were taken out when we installed an electric traveling crane, are in good shape and well worth the money.

In revising our manufacturing equipment, we find the following first class Used Machine Tools, which we offer at attractive prices:

ENGINE LATHES

14x 6 Flather, q. c. g.

16x 6 Hendey, q. c. g.

16x 6 Pratt & Whitney, q. c. g.

16x 8 Reed

18x 6 Lodge & Shipley, q. c. g.

18x 8 Lodge & Shipley, q. c. g.

18x10 Lodge & Shipley, q. c. g.

20x 8 Lodge & Shipley, q. c. g.

20x10 Lodge & Shipley, q. c. g.

22x14 Lodge & Shipley, q. c. g.

24x 8 Lodge & Shipley, q. c. g.

24x10 Lodge & Shipley, q. c. g.

27x10 Lodge & Shipley, q. c. g.

36x12 Lodge & Shipley, q. c. g.

36x14 New Haven

SPECIAL LATHES

24x7 Lodge & S. chucking lathe.
No. 3 Lodge & Shipley rapid
reduction lathe

PLANER

36x36x10 Sellers

METAL SAWS

No. 3 Nutter-Barnes cold saw
Franklin cold saw, 34 in. cap.
Globe power hack saw, 8 in. cap.
Universal pr. hk. saw, 6 in. cap.

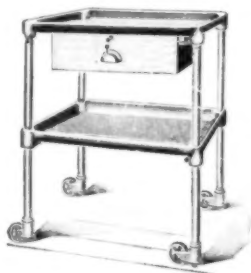
MISCELLANEOUS

Mumford 12x40 molding mach.

*Write for complete description with prices of machines
in which you are interested*

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CINCINNATI, OHIO, U. S. A.**

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